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As the season of the year approaches when travel to Alaska becomes comparatively easy we may expect to hear all sorts of rumors calculated to attract attention to the North. Already very large reports of the winter's output of gold in the Yukon region are in circulation, and accounts begin to come of wonderful discoveries elsewhere. The Copper River country's barrenness of all values was so well exposed last season that the section can hardly be used again, but there is a wide extent of territory yet unexplored, which is available. The latest reports are from Cape Nome, on the eastern stretch of the Alaska coast. Here we are told placer mines have been found by prospectors which appear to excel the Klondike in richness and to cover a large territory. The reports lack confirmation as yet, but will probably be followed by others. The meaning of all this is that it is time to cultivate Alaska travel, and the transportation companies, or their agents, are trying to do it. All reports of new finds are to be received with a great deal of caution; especially when they come from the headquarters of the steamship agents, as most of them do.

The situation in the Coeur d'Alenes shows little change, the Federal officers remaining in control, while the many prisoners made by the troops have not yet been tried. The miners belonging to the Union have generally refused to comply with the proclamation of the Governor of Idaho and abandon their association. A few only have obtained the permits required by the authorities, and consequently most of the large mines are closed down. The presence of military force prevents an outbreak, but there is no doubt that one would take place if the troops were withdrawn.

The nature of the attack made by the Union men on the Bunker Hill & Sullivan works is well shown by the photographs which we reproduce elsewhere. The mill, which was one of the largest concentrating plants in the West, is there shown to be now a shapeless mass of fragments of stone, iron and wood. A more complete wreck it would be hard to imagine. The rioters certainly did their bad work very thoroughly. The pictures are also a striking illustration of the spirit which rules in the district, and will stop at nothing to secure its ends.

The correspondence which we published last week, and the extract from a well-known Arizona paper, which will be found in another column, show that the Spenazuma Mining Company of Arizona is one of the most bare-faced frauds and impostures which has made its appearance in the mining world for some time. We have heretofore referred to this company, with its wonderful claims and the probably mythical "experts" who were supposed to report on its properties. The local authorities which we quote fully support our position. Unfortunately the company has taken good care to offer its stock for sale in quarters where knowledge of mines is not to be expected, and where warnings from persons of experience are not likely to reach; and we fear it has been successful in swindling many innocent persons into buying its worthless "securities."

We are much pleased to see that the Arizona papers are realizing the injury such fake concerns inflict on the legitimate mining industry of the Territory. Some of them are doing excellent work in exposing these concerns, and are very much in earnest in denouncing them. They cannot be employed in better work, and from their position on the ground they have special facilities for doing it well.

The numerous inquiries which we receive in relation to the minor metals—bismuth, cadmium, tungsten, molybdenum and the like—show the present disposition to utilize all the ores that can be found and to save the by-products in metallurgical operations. These inquiries come from both sides, the purchasers, who want the metals, and the miners, who have the ores; though the latter class rather predominate in these inquiries. These metals are finding uses to a degree never before known, and prospectors are searching for minerals which they have been accustomed to neglect as worthless.

Some caution needs to be exercised, or there will be many disappointments. The fact that a metal brings a high price does not always justify the expenditure of time and money in looking for it. In most cases where there is a commercial demand for any of the rare metals, it is a very limited one, and the quantity consumed is small. The production of any large quantity—of tungsten or molybdenum, for instance—would heavily overstock the market, and a fall in price would necessarily follow. A man should satisfy himself thoroughly as to the demand for these metals before spending much time or money in mining and treating their ores. Otherwise he may find himself with a metal which has cost him a good deal, and which nobody wants to buy at any price.

An explosion of an extraordinary character took place on May 14th at the chemical works belonging to the United Alkali Company, situated in St. Helens, Lancashire, one of the most important centers of the chemical industry in England. The building in which chlorate of

potash is made had caught fire, and before the firemen had had time to commence operations to extinguish it the whole place blew up with terrific force. Though only three or four men were killed, the destruction of property was tremendous. The sulphuric acid plant adjoining was torn to pieces and great quantities of the acid, amounting to hundreds of tons, were scattered in all directions. Other works near by were wrecked, and the corporation gas reservoirs were ruined, one of them having a great rent in its side through which the gas poured, to burn in an immense flame. Many houses were wrecked and hundreds of working families rendered homeless, while hardly a window in the town was left intact. The immediate cause of the explosion is somewhat obscure, and the local chemists are advancing several theories. It is probable that the charred and burning timbers of the building fell into the store of chlorate which had become fused with the heat and so caused the explosion, and also that some of the products of distillation combined with the chlorate to form explosive compounds. At this distance from the scene it is difficult to form an idea of the cause, however, and we shall have to rely on those who have the opportunity of examination on the spot to formulate an explanation.

We have heretofore given the total production of iron and steel in the United States in 1898, as collected by the American Iron and Steel Association; and we now give the output of the finished or rolled products, including both steel and iron. The figures are in long tons (2,240 pounds, except for nails, which are given in kegs of 100 pounds):

	1897.	1898.	Changes.
Structural shapes	583,790	702,197	I. 118,407
Plates and sheets, except nail plate	1,207,286	1,448,301	I. 241,015
Rails	1,647,892	1,981,241	I. 333,349
Wire-rods	970,736	1,071,683	I. 100,947
Cut nails, kegs	2,106,799	1,572,221	D. 534,578
Wire nails, kegs	8,997,245	7,418,475	D. 1,578,770
Total rolled iron and steel	7,001,728	8,513,370	I. 1,511,642

It will be seen that all these products show large increases except nails; and the decrease in those was due to a heavy over-production in 1896 and 1897, which left the makers with enormous stocks on hand at the beginning of 1898. The large gains in all other finished products show the great activity of the trade last year.

The production of rails—which included 143,875 tons of street railroad rails—was made up as follows: Bessemer steel rails rolled from ingots, 1,955,427 tons; from purchased blooms and old steel rails, 21,275 tons; from open-hearth steel ingots, 1,220 tons; iron rails, 3,319 tons. Bessemer steel, it will be seen, is now practically the sole material for rails. The production from open-hearth steel was a trifle compared with the total. Iron rail-making is also almost abandoned, only a small quantity of light rails for collieries and industrial works being turned out. The total production of finished material last year reached enormous figures; but even these seem likely to be exceeded in 1899.

LEAD SMELTING IN BRITISH COLUMBIA.

Some three weeks ago I had the pleasure of inspecting the smelting works at Trail, British Columbia, which are now operated in the interest and under the direction of the Canadian Pacific Railway Company, which, since its purchase of these works, and of the railroad connecting them with the Rossland mines, has expended nearly $200,000 in improvements of the plant. Mr. Walter H. Aldridge, who has had and still retains the direction of this department of the operations of the Canadian Pacific, is an American metallurgist, educated at the Columbia School of Mines, trained successfully in every department of practice under Anton Eilers (the most competent of masters), and certified by the record he has made in Colorado and Montana as among the first of the younger generation of American metallurgical experts and managers. Backed by the confidence, as well as the capital of the railroad company, he has been able to construct at Trail a smelting plant which, in some respects, might be studied with advantage by his American colleagues. I do not purpose to give at this time a description of it, but I may remark, in passing, that it is the only place of the kind where I have not observed the presence of numerous shovelers. The mechanical arrangements for receiving, handling, sampling, etc., are admirable; the fuel (coke from the Crow's Nest mines in British Columbia) is superior in quality to anything produced in the United States west of the Mississippi; and altogether I see no reason to doubt Mr. Aldridge's estimate that he can smelt at these works at least as cheaply as it can be done on our side of the line. Concerning the new works which he is preparing to erect in the Boundary District, I say nothing, because I know nothing.

With regard to the Trail works (and, I presume, the Boundary works, also), it must be confessed that their management by the Canadian Pacific Railway Company, as compared with that of individual owners, or smelting companies, is, at the present time, a great advantage to the mining industry of British Columbia. For the railway company appears to be willing to do what separate concerns could scarcely undertake, namely, to reduce smelting rates to figures involving little or no profit, with the view of increasing as rapidly as possible the active development of mineral resources, and consequently the amount of business for the railway. During my recent sojourn in British Columbia I read a good many local newspaper articles, of a type familiar to me, attacking this "grasping corporation." It is the usual course of history in pioneer communities, that all sorts of inducements are held out for the investment of capital in mines, railroads and other needed improvements, and that such enterprises are universally popular as long as they are disbursing money; but that, as soon as they begin to try to get returns for their money, they are denounced as extortionate and oppressive. Sometimes this charge may be true; but it is sure to be made, whether it is true or not. With regard to the present course of the Canadian Pacific Railway Company toward the mining industry of British Columbia, I am convinced that it is more liberal than any independent enterprise could afford to pursue.

Of course I do not mean to say that this policy is purely altruistic. As I have already observed, the company hopes to be rewarded for its liberality by an increase of industry and business. In my judgment, the great question at this time is, whether such an increase will take place, and the immediate interest of the mining community of British Columbia lies, not in denouncing "on general principles," the Canadian Pacific Company, but in urging and favoring, in any possible way, whatever will encourage that company in its present attempt to develop the resources of the Province.

At the time of my visit the Trail smelting works were running on copper ores only, though ready to start at short notice in the smelting of lead ores. For their supply of copper ores they are dependent upon the product of two or three mines at Rossland. As the whole region is full of prospectors for copper, other sources of supply may be developed hereafter; but the immediate outlook at Rossland is not specially encouraging in that respect; the prospect of an increased supply of copper ores being mainly confined, just now, to the mines already shipping to Trail, which will very probably be able to increase their product, having large reserves. It is well known these ores are peculiar, consisting of pyrrhotite, pyrite and chalcopyrite, carrying also gold. Gold is also contained in the accompanying silicified vein matter, though it be free from sulphides. For any larger tonnage, the business must be a low-grade proposition; and this fact has been recognized by the management of the smelting works, which encourages by low rates the shipment of the largest practicable quantities. Fortunately these works command, besides their exceptionally good fuel, a supply of highly suitable limestone as flux.

As regards lead ores, the works must, at present, depend upon getting a part, at least, of the ores of the Slocan region, which now go into the United States for reduction. So far as the mere cost of smelting and the production of base bullion is concerned, the Trail works can probably compete favorably with American establishments, but they are handicapped in the sale of their product by the fact that there are no refineries in Canada which can transform base bullion into the marketable forms of pure lead and pure silver or dore bars. Nor would it be prudent to build a refinery for such purposes before a sufficient steady supply of base bullion had been assured to it. The alternative, of course, is to send the bullion to be refined in bond in the United States, until it will pay to do the refining in Canada. Under the United States law, this can be done without the payment of an import duty, but unfortunately the Canadian law, as now administered, requires the refined lead to pay a duty of 15 per cent, upon its re-entrance into Canada. At the same time, lead imported from England is favored in the Canadian tariff by a differential deduction of 25 per cent. of the duty. The result of this curious arrangement is that the Canadian producer, after having his lead refined in the United States, may be forced to sell it in England and have it reimported from there.

This practically deprives him of any advantage in the Canadian market. That market is small, the consumption being only some 3,000 tons annually, but to this small extent it seems fair that the Canadian smelter should have the natural advantage of his geographical location, by being enabled to bring back to Canada, free of duty, the lead produced in Canada and refined in the United States. This, in my judgment, would be the simplest, most equitable, and most effective way of encouraging lead smelting in the Dominion, while enabling the Canadian consumer to obtain Canadian lead without paying the unnecessary cost of its transportation twice across the Atlantic.

I understand that the Canadian Pacific Company has petitioned for this encouragement, but I do not know with what prospect of success. The only objection of which I have heard is, that the measure would involve a loss of revenue to the Dominion of some $37,000 now collected on the annual imports of lead. This seems a small matter in view of the magnitude of the interests concerned, as the following figures will show:

Since the acquisition of the Trail smelting works, in March, 1898, by the Canadian Pacific management, they have smelted 43,000 tons of Rossland copper ores, the actual operation covering about five months.

For the smelting of these ores the pay rolls have been $148,444; the general expenses $396,164, and the payments for ores $694,238, making a total expenditure of $1,238,846 by the company. This might have been doubled if lead ores also had been treated, there being from 40,000 to 50,000 tons of lead ores mined annually in British Columbia, the whole of which was shipped last year to the United States.

The result of present encouragement of lead smelting in Canada would ultimately be to increase the Canadian consumption, by promoting the establishment in Canada of manufacturing involving the use of lead; and no doubt the ultimate result would be the refining of lead in Canada. The present sacrifice of $37,000 duties seems a small price for such future advantages. R. W. R.

NEW PUBLICATIONS.

"The Mechanics of a Cyclone." By George W. Tinsley. Columbus, Indiana; published by the author. Pamphlet, pages 24; illustrated.

This pamphlet is a study of cyclones, and an attempt to account for them on mechanical principles. The author propounds some theories which will probably not be accepted by many meteorologists; but nevertheless there is in his theory, as in most theories of the kind, a basis of fact which gives it a certain degree of plausibility. Those who are curious on this subject will be interested in the pamphlet.

"White Lead Processes and Products." By J. O. Handy. London; Eyre & Spottiswoode. Pamphlet, pages 12.

This pamphlet, which is a reprint of a paper read before the Society of Chemical Industry in March, 1899, begins with a brief introduction, classifying in a general way the different processes used in the manufacture of white lead. The rest of it is devoted to a description of the Matthews process which has been recently introduced and is now in use in a plant at Hebburn-on-Tyne in England. An account is given of the working under this process, and of its cost; and some space is given to the discussion of its advantages as compared with the old Dutch process, which is in such general use. It is claimed that lead made by the Matthews process is of better quality and more durable than white lead made by any of the older processes, and a number of experiments are given to support this claim.

"Manual of Assaying Gold, Silver, Lead and Copper." By Walter Lee Brown. Eighth edition. Chicago; E. H. Sargent & Co. Cloth, 12mo; pages, 55; illustrated. Price, $2.50.

This work has been very successful in its special field, and is now issued in an eighth edition, the first having appeared in 1883. The most noteworthy improvement in this last issue is a revision of the list of useful books more or less connected with assaying, which will enable students and working assayers to readily refer to the literature of the subject and its related branches, such as chemistry, mineralogy, geology, mining and metallurgy. This brings the bibliography up to date. Besides this, the whole treatise has been revised, and some corrections have been made. Much useful information is also given in the appendix.

Part I. describes apparatus and reagents, and the testing of the latter. Part II. takes up actual assaying, under the heads of gold and silver ores, copper ores and lead ores. The work does not go far into the refinements of assaying, and is weak on the assay of bullion and furnace products; but as an elementary and handy manual it serves its purpose and has been well received, the earlier editions finding a large sale.

"Bridges and Framed Structures." An illustrated monthly magazine. Chicago; the D. H. Ranck Publishing Company. Pages 88; illustrated. Price, 30 cents a number, or $3 a year.

The construction of bridges and buildings of steel and iron is so important an industry in this country, that it is perhaps a little surprising that it has not had an organ of its own; though, doubtless one reason has been found in the great amount of space and attention given to it by the different engineering periodicals. The new magazine is intended to supply any deficiency that may have existed, and its publication is undertaken by parties who have had a good deal of experience in work of this kind, as they already issue several excellent periodicals. The number before us contains articles on the Inspection of Iron and Steel; Recent English Practice in Bridges; Bridge Evolution as Relating to Southern California; Chemical and Physical Constitution of Steel; Architecture of Bridges, Parapets and Balustrades; a Notable New Bridge Machine Shop; the Loading of Long Structural Material. In addition to these technical articles, there is a very interesting review of the work of the late General Albert Fink—an engineer who is so well known from his later career, as a master of the science of traffic and general arbiter among the railroad companies, that his earlier work as a bridge builder of great ability is often overlooked. General Fink brought a thorough mathematical training, great mental powers and an extraordinary fertility in expedients to the work of bridge building, and he added to this a preliminary training under Benjamin H. Latrobe, the greatest of the earlier generation of American engineers. Some of Mr. Fink's structures are landmarks in the history of bridge building; and it must be remembered that he had not at his disposal material of as high quality or as uniform excellence as is supplied to the engineers of to-day.

The magazine is copiously illustrated both by half-tone cuts and line drawings, and presents a variety of material which must be very useful to bridge builder and engineer. Some of the articles are exceedingly practical, as, for instance, that on the loading of structural material, which shows a number of methods and devices for loading long girders and similar material on cars. We should mention that, in addition to the articles named above, there are a number of short notes on matters of interest to bridge builders. We hope that our new contemporary will attain the success which it deserves, and that the excellence of its contents will be fully appreciated.

"The Character of Crystals: An Introduction to Physical Crystallography." By Alfred J. Moses. New York: D. Van Nostrand Company. Cloth, 8vo., pages 211; illustrated. Price, $2.

This work is intended for the use of organic chemists, geologists and mineralogists, and also as a text book. The author states his aim to be to describe simply and concisely the methods and apparatus used in studying the physical characters of crystals, and to record and explain the observed phenomena without complex mathematical discussion. At the same time, as every technical graduate will recall with painful reminiscence, crystallography cannot, if it is to amount to anything at all, be made a very easy study. In the present instance we think that the author has succeeded as well as the conditions permit in making a clear presentation of what must necessarily be, at best, an abstruse subject, and in rendering it as little disheartening to the student as possible. Naturally, the plan is based mainly upon the work of the painstaking German specialists, though it avoids the complexity of detail which characterizes the literature of this advanced German school of mineralogists.

The book is divided into three parts. Part I. relates to geometrical characters, under which head are chapters on the general geometric properties of crystals, spherical projection, the 32 classes of crystals (following here Groth's classification), the measurement of crystals (with a description of goniometers and their application), and the crystal projections in drawing. Part II. covers the optical characters, and contains chapters on the optically isotropic crystals, the optically uniaxial crystals, the optically biaxial crystals, nnd the determination of the latter. Part III. is devoted to the thermal, magnetic and electric characters, and those dependent upon elasticity and cohesion. An appendix gives an outline of the post-graduate course in crystallography pursued at Columbia University. This summary of the principal topics discussed will serve to show that Prof. Moses' treatise is thoroughly modern; and while, in a sense, it is quite advanced, the method of treatment is as concise and clear as the intricacy of the subject allows.

To those of us who found the old six systems of crystallization rather more than could be comfortably digested, the 32-fold classification may on its face seem something which it is a matter of congratulation to have escaped, and one is inclined to wonder how much farther into detail the science of crystallography is to be carried; yet if molecular structure rather than mere outward form is to be accepted as fundamental, the new system is certainly more logical, and is also more intelligible since it does away with some anomalies of the older teachings, while after all the 32 grades or classes of symmetry may be united into six systems, as before, by grouping together classes in which the selected axes of reference are geometrically similar. It is not necessary to carry all the minutiæ of the science in one's memory, reference books being always available; and for the average student in a technical school or for the everyday work of the mining expert or the field geologist it is not required to go very deeply into crystallography. But for the comparatively few specialists who devote their whole attention to mineralogy or petrography, such intimate knowledge is essential; and this treatise, which Prof. Moses modestly styles "an introduction," will be welcomed as a convenient bridge to the more formidable text books.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"The Future of American Industries." By A. E. Outerbridge, Jr. Philadelphia, Pa., 1899. Published for the Author. Pamphlet. Pages, 18.

"Catalogos Sistematico y Geografico de las Especies Mineralogicas de la Republica Mexicana." Por Jose G. Aguilera. City of Mexico, 1898; State Printing Office. Pages, 160.

"Eighth Annual Report of the Bureau of Labor, Statistics and Mines of the State of Tennessee, 1898." A. D. Hargis, Commissioner. Nashville, Tenn.; State Printers. Pages, 248.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letter should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Deep Mining in Arizona.

Sir: Early in the history of mining in Arizona, the opinion was formed by the prospectors that "the veins did not go down." This idea has continued to prevail to a greater or less extent until lately, and is still held by many. I have also heard it expressed by men who have done much prospecting and mining in other sections of the Pacific States. This idea, of course, pertained altogether to fissure veins, and has been applied to that class of veins, without regard or reference to the enclosing rocks; nor have any arguments been advanced to explain why it should be different from any other mining sections. The prevalence of this opinion has very often worked to the detriment of the mining interests, especially in the Bradshaw Range; the average smallness or narrowness of the veins has also been referred to.

The first question, naturally, to be asked, is "Did you go down to see?" The answer to this, proven by the thousands of holes one finds, is "No." The prospector, when he finds a vein, hunts along it to find a pay

streak, and if he does not find one, abandons it. He may find a rich spot, and if so, goes at once to work. If it pinches on him, he soon gives it up and says, "The vein played out; it did not go down." At most, his work reaches the limit of a windlass, unless particularly rich. On the hundreds, I might say thousands, of holes that I have seen, there may have been, possibly, twenty whims erected by prospectors.

Very often these works have been in tunnels, and extending some hundreds of feet, but that does not count in the argument that "the veins do not go down." Some will say that the veins do not hold their value in depth. The proofs for this are based upon no better arguments than those given above. Work done in late years—say the last five or six—in the deeper mines, goes to prove the contrary of this proposition, and that in a very marked degree. Of this we have many examples, though we cannot be said to have any examples of deep mining.

In the Congress the inclined shaft has reached a depth of about 1,800 ft., but the vein is so flat, that the perpendicular depth from the surface is only about 700 ft. The Crowned King has a shaft 560 ft. deep below the tunnel level; the deepest back over the tunnel being about 1,000 ft. The McCabe and Little Jessie in the Chaparral District are each 600 ft. below the collar of the shaft. The Senator is 600 ft. from the crop to the crosscut tunnel. The Gladiator 600 ft. from the crop to the crosscut tunnel level, and shaft sunk 100 ft. below that level. These are the deep mines of Yavapai County.

Let us now consider each of these cases. In the Congress we find that they had rich ore at the top, and the values have not decreased in depth. The utter inability to extract the values at the start caused this property to remain idle for about 20 years, and until the present owners took hold of it. Upon reaching a depth of between 100 and 200 ft., the vein disappeared, being intersected by a dyke, but on passing through that obstruction they found the vein again in place. Had it not been for perseverance, this mine might have been quoted as a proof that "the vein did not go down."

On the Crowned King they worked to tunnel level on $10 free gold per ton, with some concentrates. This has increased with depth to an average of $40 per ton, about one-half of it being free gold. Some pockets have yielded ore going into the tens of thousands in value; besides, the average width of the vein has increased. At the McCabe the vein has shown a steady increase in width, and maintained the values, possibly a small increase in value of ore.

At the Little Jessie the assorted ore was rich at the start and has produced the same quality to the bottom of the mine. The nature of the deposit is peculiar, and the work has been prosecuted more in the manner of a search for the rich pockets, the great body of the deposit being left still standing. On the Senator the best shoot of ore was at the top, but the richest ore has been found near the bottom. In the Gladiator the quantity and value has increased with depth, particularly below the tunnel level. To this list might be added the Belle & Poland, 400 ft. deep, and the Favorite, on Lynx Creek, 300ft. deep.

I know of no instance where "the vein has played out," and therefore hold that there is not a particle of proof of the statement made at the beginning of this article. In this list you have ores of nearly every variety except silver ores. It is very easy to start an opinion, but it takes some time to contradict it.

John F. Blandy.

Prescott, Ariz., May 19, 1899.

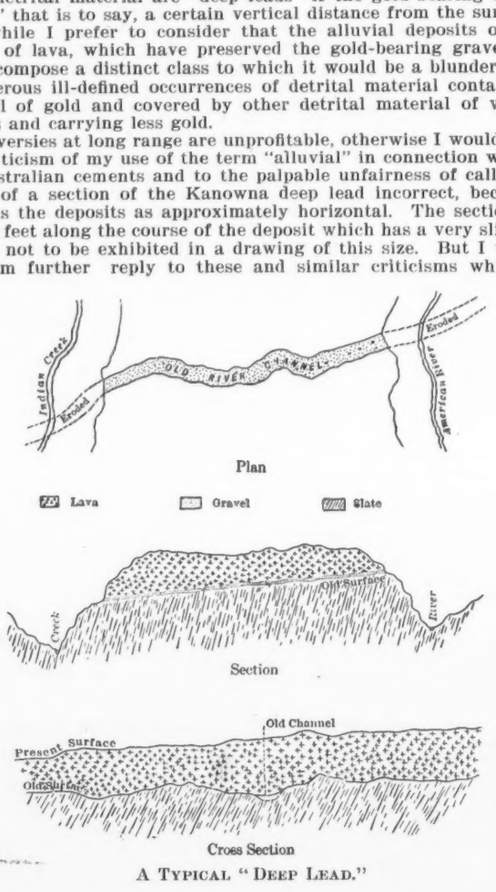
What is a "Deep Lead"?

Sir: In your issue of May 13th you publish an interesting contribution from Mr. E. F. Pittman, the government geologist of New South Wales, which contains an adverse criticism of certain views expressed by me in the course of a paper, entitled "The Alluvial Deposits of West Australia," read at the last meeting of the American Institute of Mining Engineers. I am glad Mr. Pittman employed your columns for a rejoinder, because it was certainly to him that I referred, on page 40 of the pamphlet edition of the paper mentioned, when speaking of "a distinguished government geologist from a neighboring colony, who visited Kanowna in October, 1897, and gave authority to the term deep lead by using it himself." Mr. Pittman has taken up the challenge frankly. He takes exception to "the implied suggestion that all the deep leads of Australia are overlain by caps of lava," and also adds that "many, but not all, of the old (Tertiary) alluvial deposits are overlain by basalt." Finally he suggests that I am ignorant of the deep leads of Rutherglen, in Victoria, which have no such covering of basalt. To make the controversy clearer, please permit me to quote that part of my paper which is under criticism. The middle paragraph of page 40 reads thus:

"But because this alluvium disappears under an overburden of rock,* the Australian digger easily fancies he is working a deposit similar to the 'deep leads' with which he became familiar at Ballarat, for example. A distinguished Government geologist from a neighboring colony visited Kanowna in October, 1897, and gave authority to the term 'deep lead' by using it himself. 'Deep' it may be, for that is a comparative adjective, but a 'deep lead' in the technical sense it most assuredly is not. On the Forest Hill divide,† in Placer County, California, and at Creswick, in the Ballarat District, Victoria, the typical 'deep leads' occur. They are, as is well known, old (Miocene) gold-bearing river channels, which have been saved from erosion by a cap of lava. The lava probably overflowed the original surface as a steaming mud, and is now found consolidated into a vulcanic rock sufficiently hard to need little timbering when penetrated by underground workings. The cement deposits of West Australia occur under an overburden of 'made ground'; that is to say, both the deposit itself and all the material under which it dips are of distinctly detrital origin, the products of weathering and erosion accumulated in shallow depressions of the much-decomposed surface of granite or diorite.

The point at issue is evident. Mr. Pittman objects to the definition of a "deep lead" as an old gold-bearing river-channel covered by a cap of lava. He says that there exist, in Victoria and in Western Australia, deep channels which are covered by made ground of distinctly alluvial origin instead of lava. But the term "deep lead" is neither his nor mine; it was employed long before either of us was capable of courteous disputation, and it originated in the two districts which still remain famous for this form of gold-bearing deposit, namely, the Forrest Hill divide in California and Creswick in Victoria. The government geologist of New South Wales evidently considers that alluvial deposits covered by detrital material are "deep leads" if the gold-bearing channel is "deep," that is to say, a certain vertical distance from the surface of today; while I prefer to consider that the alluvial deposits overlain by flows of lava, which have preserved the gold-bearing gravel from erosion, compose a distinct class to which it would be a blunder to add the numerous ill-defined occurrences of detrital material containing a good deal of gold and covered by other detrital material of variable thickness and carrying less gold.

Controversies at long range are unprofitable, otherwise I would object to the criticism of my use of the term "alluvial" in connection with the West Australian cements and to the palpable unfairness of calling my drawing of a section of the Kanowna deep lead incorrect, because it represents the deposits as approximately horizontal. The section covers a few feet along the course of the deposit which has a very slight inclination not to be exhibited in a drawing of this size. But I will refrain from further reply to these and similar criticisms which are



A TYPICAL "DEEP LEAD."

prompted, it would seem, by my use of the words "far-fetched" and "fantastic," to describe that theory of origin which has likened the alluvial deposits of Kanowna to the banket of the Rand. I did not know, nor do I now believe, that Mr. Pittman fathers such an explanation. I prefer to believe that he has misunderstood me and to hold that it is better to allow a misunderstanding at a range of 12,000 odd miles to lie dormant than to endeavor to explain it away. It would, however, give me pleasure, and you, Mr. Editor, I am sure, to think that this friendly controversy will lead to Mr. Pittman sending the "Engineering and Mining Journal" other contributions, to which no one will grudge the term of deep, as well as valuable.

T. A. Rickard.

Cripple Creek, May 19, 1899.

*Using the word in its geological sense. Mud is "rock" as much as granite.

†I append a drawing of a typical deep-lead recently examined by me in this particular locality.

A SAFETY-BRAKE FOR HOISTING.—In an emergency brake for vertical or inclined shafts, designed by Herr Wilhelm Muller, of Altenessen, Westphalia, both ends of the wire rope can be simultaneously clamped by half-round, concave brake blocks, while, by the swinging of a counter-weighted lever out of its vertical positions, chains that act upon the brake blocks are wound up on a shaft, thus pressing the blocks against the rope.

COAL EXPORTS OF GREAT BRITAIN.—The exports of coal, coke, cinders and briquettes from the United Kingdom during April reached the high total of 3,455,109 tons, being 853,853 tons in excess of the shipments of April, 1898, and 629,516 tons more than the exports of April, 1897. The total for the four completed months of the year stands at 13,146,705 tons, as against 11,109,798 tons in the corresponding period of 1898, and 10,810,714 tons in the first four months of 1897.

A BELGIAN COLLIERY.—At the Henriette pit of the Flenu Colliery, Belgium, coal is now being got from the depth of 1,150 m.; and a new winding engine is being erected with cylinders of 1.1 m. diameter and 2.1 m. stroke, for raising a load of 6 tons, three for the coal and three for the cage and tubs. The length of the flat Manila-fibre ropes is 1,350 m., its section being 420 mm. by 48.5 mm. at the drum, or rather winding pulley, and 225 mm. by 27.5 mm. at the cage end; and the mean weigh is 11 kilogs. per running metre, which gives a total weight of 14.85 metrical tons. The minimum radius of winding up on the pulley is 1.62 m., and the maximum radius 4.22 m. The temperature is very high at the working face; but with active ventilation, which is rendered necessary by the large quantity of firedamp given out, the air-current being 18 cubic metres per minute, the men are not inconvenienced, reports the Belgian correspondent of the Paris "Echo des Mines." When the thermometer marks 0° C. on the surface, the temperature under ground is 15.5° C., and with 7° C. on the surface, 16.5° C. under ground.

THE DESTRUCTION OF THE BUNKER HILL & SULLIVAN MILL.

The news columns of the "Engineering and Mining Journal" recently have contained accounts of the troubles in the Coeur d'Alene Region in Idaho, growing out of the latest outbreak of the Miners' Union. The especial point of attack in this case was the Bunker Hill & Sullivan Company, which had carried out all its agreements with the men employed, but had employed men who did not belong to the Union. The agreement, which was made when work was resumed after the troubles of 1892, provided that wages should be $2.50 and $3 per day until prices advanced to where 100 lbs. of lead and 2 oz. silver should be worth $6. This agreement has been in force since, but the Union has been trying to get back some of the authority it lost by seeking many small concessions from the companies and increasing its membership until it was evident that another conflict was bound to come. Finally, on April 24th, the Wardner Miners' Union demanded that the Bunker Hill & Sullivan and Empire State-Idaho companies should pay a uniform rate of $3.50 a day to all men employed underground, and discharge all non-union miners. Superintendent Burch of the Bunker Hill Company offered to restore wages to where they were before 1892, but said the mine and mill would stay closed 20 years before union men only would be employed, while Superintendent Sweeney, realizing that the companies should yield no further, closed down his mine and mill. Many of the 200 non-union men employed by the Bunker Hill Company remained at work, despite threats and even attempts at violence by union miners.

On April 29th, after the discussion had reached this point, a gang of men heavily armed, and many of them wearing masks, from Burke and Mullan took possession of a train and invaded Wardner, bringing with them 600 lbs. of dynamite. After a parley of two hours, 140 masked men, armed with rifles, the Burke men in the lead, and those from Wardner following, started with yells for the Bunker Hill & Sullivan Mill. One of the pickets sent ahead was shot, being mistaken for a non-union miner. The strikers took possession of the Bunker Hill & Sullivan Mill, which they found deserted, the manager having directed his employees not to risk their lives by battling with the mob. Dynamite was called for and over 2,000 lbs. put under the brick office building and around the mill. Then the boarding house, a frame structure, was burned, and the charges were lighted and the mill blown up. The wrecking of the mill involves the livelihood of 600 persons.

As our readers know, the district is now under martial law, and order is maintained by Federal troops, sent there at the request of the Governor of Idaho.

The mill of the Bunker Hill & Sullivan Company was a concentrating plant, having a capacity of 400 tons daily. It was very fully equipped with machinery, and was considered a fine plant of the kind. The ores, after handling there, were generally shipped to the smelters. The concentrates were usually brought up to about 60 per cent. lead.

What the condition of the mill was when the Miners' Union men left it, is shown in a very striking way by the three illustrations which we give herewith. The structures and the machinery within them were merely a mass of lumber, steel and iron. It is hard to recognize anything about it. A more complete wreck it would be difficult to imagine, and the money loss must be a complete one, since it will be apparently impossible to save anything from the scattered piles of rubbish.

For the photographs from which the illustrations were made we are indebted to the courtesy of Mr. V. M. Clement.

VIEW OF BUNKER HILL & SULLIVAN MILL AFTER THE EXPLOSION.

THE SPENAZUMA MINING COMPANY.

The "Arizona Republican," published at Phoenix, Arizona, gives in its issue for May 17th a letter from George H. Smalley, who has visited the Spenazuma District recently, and his communication contains so much of interest that we give the larger part of it below. He says, after some preliminary remarks on the scenery of the district: "A great deal has been written of the Spenazuma Mine, and Eastern papers, wherever the agents of the company have appeared, tell of its great wealth and the fortunes which will be made by those who invest in its stocks. It is described as the most wonderful mine ever found, and the vein is estimated at from 1 to 2 miles in width. The prospectus of the company relates a story which is intended to thrill the Eastern farmer, the laborers in the shops, and all that class of people who live far from a mining center and know little about mines and mining. Investors among the poorer classes have been attracted and thousands of dollars of stock has been sold. The New York papers for weeks contained a column advertisement describing this property and announcing that the stock of the company, which was then selling at $12, would be raised. A special train brought 50 Easterners to this camp, who spent several days here 'examining' the mine. This was but two months ago, and the cow punchers about here are still talking about the invasion and wondering where so many green folks came from. For weeks before this party arrived L. L. Wight, who owns the Marblehead copper mines in the Arivaipa District, was kept busy packing ore to Spenazuma from his mine. Other mine owners in the Stanley Butte and Deer Creek districts, which are located in the rich strip recently segregated from the San Carlos Reservation, reaped rich harvests in a like manner, and when the visitors arrived they found this ore arranged in bins at the camp and some of it was found on the dumps at the different workings. Mr. Wight's ore was also shipped East, and it was this that sold so much of the Spenazuma stock. This information comes from Mr. Wight and other mining men in the San Carols strip.

"When I arrived at Spenazuma I learned that visitors were not allowed in the workings of the mine. At the office of the company there was a chill in the atmosphere, which confirmed what I already knew—I was an unwelcome visitor. The information was given gratuitously that 20 men were employed, and rich ore had been found in new ground. About the camp men resting in rocking chairs and hammocks swung in the shade of great sycamore trees. A neat fence painted white to contrast with the deep green all about enclosed a dozen tents which were prettily arranged in this little park. Each tent is provided with a fireplace made of brick, the most of them have floors, and all are inviting to the weary traveler. These tents are for the visitors from the East who buy Spenazuma stock. Further on are more tents and bunk houses of less pretentious architecture, which are occupied by the miners, who tickle the ribs of the hills with giant powder and draw $3 a day even if they never see the color of copper. I dropped into a chat with one of these miners who was waiting for shift time. He said that he had been working at the camp several months and had not seen any ore in all that time. 'This is the laziest camp I ever struck,' said he. 'We have a

good time during our shift, and very little work is done. The boss don't seem to care as long as we are in the workings, and that we do not fail to work hard when any one shows up at the shaft or tunnel where work is being done. One of the boys figured out that it cost the company $32 a foot to sink that shaft near Black Rock, and I believe there was about as much spent in the other work.'

"During the visit of the Easterners, according to the miner, there was great excitement at the camp. Men were crowded into the tunnels and shafts and admonished to work as hard as they knew how when the visitors were in the workings. One of the visitors was a woman from New York who had purchased considerable stock. 'The men who took the party through the mine herded them pretty close,' continued the miner, 'but there was one woman who lingered to talk with the men. She asked me if I thought the mine was rich, and I told her that it paid me $3 a day and I didn't care if we never struck ore. She said she thought it was a rich mine and she intended to buy more stock when she returned East. The mica schist in the bottom of the shaft had been pointed out to her as rich copper ore, and she did not know any better.'

"From the bunk tent the new building erected by the company for its reduction works was but a short distance, and there I found a substantial evidence of the fraudulent nature of the Spenazuma Company. A man was in charge of the building, and when he was asked what the structure was built for he said it was either to be a mill house or would be used for ore crushing and leaching. The building rests on the bare ground with no foundation but the loose earth. It is large enough to contain 20 stamps if it is to be a mill, but there is not strength enough in the building to keep it from crumbling under the friction of the ore crusher alone. The heaviest timbers are 4 by 6 in. and there are but few of these used. Two-by-fours are main-stays of the structure. Two large boilers are in place and there is a huge Corliss engine on the ground whose proportions present a ridiculous contrast alongside the building. Work was pressing on this building when the eastern investors were there, but it has since ceased, and I was told that it would never be finished.

"Down in a gulch from this building are the placer diggings of the company, where their prospectus tells us are buried the fortunes of countless people. There is a box-framed arrastra there which is idle now, and the fortunes were considered too hard to get by prospectors who worked these diggings 20 years ago. There is a well here which has an abundance of water and here is probably the supply point for the mill if the time ever comes when it will require water. The first requisite should be the ore, and this the present workings of Spenazuma do not afford.

"The mines of Spenazuma are interesting because they are unique. There are four tunnels and three shafts of importance, and workings of less interest to the visitor. The trail from the mill building takes you to all of these and they are scattered about the hills in all directions. At the mouth of the tunnels are great dumps of waste matter and scarcely a trace of ore except in one tunnel, which is driven into a hill 400 ft., but the product is so small that it can hardly be found in the mass of waste. An indication of ore was encountered in striking a body of talc in this tunnel, as this is often the gangue matter of a vein. The ore body was not found, however, although small stringers of sulphide ore from 2 to 6 in. in width were met with and their wealth exhausted. On the trail toward the Annex Shaft, which is the only place where ore has been found of any value, there are a number of tunnels, with prolific dumps of waste and no ore. The Annex was bonded by the Spenazuma Company, but the bond was never taken up, and the property has reverted to O'Neill, Duncan & Woods, the original owners. A shaft has been sunk 50 ft., and there is a 2-ft. vein of sulphide ore. Here is found the only defined lead in the district.

"The formation of the Spenazuma District is broken and shaken. There is slate, schist, porphyry and shale thrown together in indefinable shapes. Nature, after making a perfect mineral zone, which extends for nearly 100 miles toward the northwest from Black Rock, seems to have used this district as a dumping ground for the waste matter of its work. Black Rock itself forms the southeastern terminus of that zone, and ends it as abruptly as a horse separates mineral bodies in a mine. If there is copper in Spenazuma District it is but a saturation which found its way through small fissures when the great copper zone of the San Carlos strip was formed."

VIEW OF BUNKER HILL & SULLIVAN MILL AFTER THE EXPLOSION.

A GREAT RUSSIAN DREDGE.—A powerful dredge has been built for the Russian Government by the John Cockerill Company at Hoboken, Belgium. The dredge is constructed on the principle of the dredge "Beta," in use on the Mississippi, but it is much larger, being able to remove 4,000 cubic yards of sand, gravel, clay or similar material per hour to a distance of 700 ft. The dredge is to be used in digging a ship canal to connect the Baltic with the Volga. The earth is cut up and mixed with water by revolving cutters, until it is of a consistency which can be readily forced up by two steam pumps of 1,428 H.-P. each. The dredge is 214 ft. 6 in. long, by 61 ft. 6 in. wide, and when ready for work it draws 4 ft. 6 in. of water.

A JAPANESE TRAMWAY.—The "Japan-American Commercial Journal" says: "The Zuso Jinsha Tetsudo (tram-car drawn by men) running between Odawara, Sagami province, and Atami, Izu province, for a distance of 17 miles, has recently effected a very radical reform. The cars, which were formerly drawn by six coolies each, are to be supplied with motive power by means of an oil-engine introduced from America and a trial of which has given most satisfactory results. The motors will be in use during the current month."

GOLD IN ITALY.—An English company, mining in Monte Rosa, in the Southern Alps, has struck on a vein of gold ore, says the London "Mining Journal." Analysis has obtained 2 kilogrammes of gold from each ton of selected samples. There is nothing new in the discovery of gold in the valleys of Monte Rosa. In Roman times gold mines were largely worked in that region, and off and on they have been worked ever since. In the older books of Alpine travel, descriptions of the mines often occur, and travelers are well acquainted with the adits of many disused mines in the Val Auzasca and Val Mastalone. Recent improvements in gold mining machinery have called renewed attention to these Alpine mines, especially to those near Macerguaga and Magna respectively, which are now being exploited by an English company.

THE UTILIZATION OF BLAST FURNACE SLAG.
I. POSSIBILITIES.

By Alex. D. Elbers.

The slag of blast furnaces is thus far, practically, a valueless product, inasmuch as all of its established utilizations are based on the condition that it can be had for the asking. In most cases the furnace owners are even willing to extend especial inducements for taking it away, so as to avoid the greater loss of removing it at their own expense, which, with some of the larger works in this country, amounts already, annually, to sums that are equivalent to 3, 4 and 5 per cent. interest on $1,000,000, if not more. Nevertheless, the owners of such works do not seem to be very anxious to establish slag-works on their own account, which is the more remarkable, as they are certainly not deficient in business sagacity. Hence, it may be supposed that the utilizations that have thus far been established, here as well as abroad, are either not sufficiently remunerative, or not capable of sufficient development to make it worth their while to bother with them; and this supposition is not very far from the truth.

Thus the direct conversion of molten slag into glass has no other advantage than a slight saving in fuel and in the duration of the boil; and the product is not as profitable as that which is obtained by smelting natural silicates that contain an appreciable percentage of alkalies, such as granites, phonolites, etc.

VIEW OF BUNKER HILL & SULLIVAN MILL AFTER THE EXPLOSION.

Neither can the manufacture of unbaked, air-dried slag-stones, made of granulated slag mixed with lime, be recommended as a paying venture, excepting, perhaps, in localities that are too far remote from suitable clay deposits to be supplied with brick of the ordinary kind.

The manufacture of so-called slag-cement—a composition that consists of granulated slag that is first dried, then ground fine and mixed with pulverized slaked lime, and, in some cases, with a small proportion of soda—has also a precarious existence, chiefly on account of the shortcomings of the product.

The most essential characteristic of a true hydraulic cement is its inherent setting property, or—to put it in another way—the capacity of its constituent silicates to hydrate without undergoing any material change in volume. Very basic or subsilicate slag has only feeble setting capacity; and the less basic usually has none. The set of the slag-cement is, therefore, chiefly dependent on the reactions of the admixed lime. As soon as the cement is gauged, some of the lime dissolves; the dissolved lime reacts on the slag-particles, extracts from their surfaces small portions of gelatinous silica, and combines with them; and the resulting new compounds, which are also at first in the gellatinous state, agglutinate the mass, and, in hardening gradually, cement it more firmly. A small admixture of soda is apt to intensify these cementitious reactions; partly because it prevents the gelatinous compounds from drying out too quickly during the setting, and also because it acts as a bearer of gelatinous silica to the lime when the set mass is kept immersed. The setting progresses, nevertheless, rather too slowly.

The main technical objection to such slag-cement is, however, its sulphurous condition.

All blast-furnace slag that is easily reacted upon by lime carries usually several per cent. of calcium sulphide in intermolecular combination, which means that each particle of the slag—however small—contains it in about the same proportion. In the gauged slag-cement this impurity dissolves to the extent to which it crops out on the surfaces of the slag particles, while the aforementioned reactions of the lime are progressing, and thus becomes mixed up with the forming cementitious matter. The amount that goes actually into solution averages probably not over 5 per cent. of the total contents; but the amount of silica that becomes dissolved by the lime is also, comparatively, insignificant; hence the forming cementitious compounds, on the gradual induration of which the ultimate strength of the mass depends, are apt to become as sulphurous as the crude slag is, if not more so; and the consequences of this condition is, that the applied cement becomes liable to subsequent disintegration, which sometimes may only set in after the lapse of years.

The aforementioned slag-stones are comparatively free from this defect because the granulated slag—which enters their composition without further comminution—becomes, to a certain extent, superficially desulphurized during the process of granulation by the action of hot water and steam; but the slag that is made up into cement is ground fine after granulation; hence, the surfaces of its particles are nearly as sulphurous as their interior. Nor does the drying at a comparatively high temperature have any appreciable effect on the sulphurous interior of the granulated particles. Further details of the process, as carried out at Seraing in Belgium, can be found in "Notes on the Manufacture and Preparation of Blast Furnace Slag Cement," published in the "Engineering and Mining Journal," in its issue of October 30th, 1897.

Another utilization of blast-furnace slag, which is carried on in a rather surreptitious manner, is its admixture to Portland cement. It has long been recognized that Portland as well as Rosendale cement can be improved by the admixture of silicifying ingredients; the one, because its composition is of necessity very basic; and the other, because it contains a considerable quantity of magnesium silicates that do not become disclosed by the burning, and, consequently, remain comparatively insoluble. Blast-furnace slag of the singulo-silicate type, and especially that which contains from about 12 to 15 per cent. of alumina, is admirably suited for such admixtures, barring its sulphurous condition, inasmuch as the constitutional lime, that dissolves out of the gauged burned cement, reacts on the admixed slag particles in the same manner as does the admixed lime in slag-cement. In order to free such slag from its sulphurous condition, at least to the extent to which that condition can have any injurious influence on its cementitious properties, it has been proposed to desulphurize it superficially in its pulverized state with a weak 2 per cent. solution of nitric acid. This treatment is described in United States Letters Patent No. 579,820, dated March 30th, 1897, and No. 617,241, January 3d, 1899. It is cheap, and has given very satisfactory experimental results, which were published in the "Engineering and Mining Journal" during the second half of the year 1897 in a series of four articles, entitled: "Nitrosylized Blast Furnace Slag as an Addition to Hydraulic Cement."

It is, however, not likely that the more basic slag, that is used for slag-cement, can be treated advantageously by such means, because the nitric acid attacks the lime of the subsilicates just about as quickly as it reacts on the calcium sulphide; whereas the less basic slag, that is suitable as a silicifying ingredient, only yields the sulphide to the acid, always provided that the latter is not used to excess.

Of all industrial utilizations of blast-furnace slag that have thus far

been attempted, the only one that has possibilities of development that are somewhat commensurate to the ever-increasing supplying of this troublesome waste, is its direct conversion into building stone and kindred products. There is no difficulty in casting fresh-tapped slag into molds for flooring tiles and paving bricks, and into other plain as well as ornamental shapes for builders' work; but all efforts to make such an industry a success have thus far been frustrated by the unsightly looks of the product and by its want of toughness, the one as well as the other defect being entirely due to the sulphurous condition of the material.

It would seem that in view of the many failures to turn sulphurous slag into salable industrial products, more general attention would have been given to the problem of desulphurizing it in the molten state, the more so as desulphurizing, decarbonizing and dephosphorizing processes are the very life of our present iron and steel industry. That this has not been the case is, primarily, attributable to the circumstances that the usual method of preparing slag for analysis (resmelting it in crucibles in admixture with soda or potash) does not reveal the characteristics which its silicate-mass has when it is free from sulphur, and that it is not customary at blast furnaces to make experiments with slag for the purpose of finding out what it will look like after having been redeemed from its scoriaceous condition.

It may, therefore, even at the present time, be a revelation to many experts in the manufacture of iron and steel, that blast-furnace slag of singulo to sesqui-silicate constitution would—minus the sulphur—make splendid building stone for the facing of walls, capable of being tooled in the same manner as freestone, as tough as granite, more homogeneous than basalt, of more pleasing color—from a light gray to a dark brown—than the various kinds of sandstone, and more resisting to atmospheric influences than the architectural limestones, including marble. A ton of such material would probably yield by measurement about 11 cu. ft. of freestone of a finely granular texture, capable of a high polish, and requiring but little dressing for face-work; and as to size, it is likely that sound castings could be produced, about 3 ft. in length, 2 ft. in width, and from 4 to 8 in. in depth, or even larger.

POTASH AND SODA SALTS FROM NATURAL DECOMPOSITION OF LEAD SLAGS.

Written for the Engineering and Mining Journal by Malvern W. Iles and Chas. F. Shelby.

For a number of years there has been noticed at and near the bottom of the slag dump of the works of the Globe Smelting and Refining Company, at Denver, Colo., a white efflorescent salt of a hitherto unknown chemical composition. Since the amount of this substance was quite insignificant, and a carefully conducted analysis would partake of the nature of a scientific research, with little hope of commercial gain, we delayed making a careful study of the chemical composition of the product. This salt is more noticeable on the older and more weathered portions of the slag dump. It has a greyish white color, frequently tinged with brown or red.

The geologist will here find ample material for speculative thought, as doubtless the same chemical changes are now taking place, and have been going on for many geological eras with natural silicates. We will give here only a plain statement of the facts such as we have found them.

This whitish efflorescent salt is more noticeable on the undersides of overhanging projections, and it was from one of these places our sample was obtained by carefully chipping off small pieces of the slag that was covered or encrusted with this salt. Since the salt was discovered to be readily soluble in water, we transferred portions of the encrusted slag to a large porcelain casserole, and carefully digested to solution of the white material by the use of pure distilled water; then filtered, and evaporiated to dryness and submitted the resultant residue to anlysis after trituration in an agate mortar.

The result of the analysis gave the following substances, without showing the probable state of combination:

Sulphuric Anhydride (SO_3)	48.45
Potassic Oxide (K_2O)	28.44
Sodic Oxide (Na_2O)	13.48
Calcic Oxide (CaO)	1.80
Magnesia Oxide (MgO)	1.08
Ferric Oxide (Fe_2O_3)	0.29
Manganous Oxide (MnO)	0.76
Chlorine (Cl)	0.47
Loss on ignition	2 40
Total	96 67

Of the total amount (96.67 per cent.) there was found to be 48.92 per cent. existing as acids and 47.75 per cent. as bases.

In accordance with our best judgment the various substances existed in a state of combination as follows:

Potassium Sulphate	52.64
Sodium Sulphate	29.97
Sodium Chloride	0.77
Calcium Sulphate	4.37
Magnesium Sulphate	3.24
Ferric Sulphate	0.73
Manganous Sulphate	0.56
Sulphuric anhydride in combination with other bases	1.89
Loss on Ignition	2.40
Total	96.57

The difference of 0.10 per cent. between this last named total and that stated for the total of the bases and acids, is due to the sacrificing of 0.10 per cent. of oxygen from the sodic oxide in forming sodium chloride.

There is 3.43 per cent. of something unaccounted for, which we can not find, although diligent search has been made. Having satisfied ourselves with the accuracy of the results given above, we are led to state that in all probability it may consist of some or all of the other alkalies, lithium, caesium or rubidium combined with sulphuric acid. In confirmation of this statement attention is directed to the fact that the analysis reveals the fact that there is 1.89 per cent. of sulphuric anhydride not needed for combination with the bases found. We have not the facilities for making a spectroscopic examination of this product. Very recently some very surprising physical properties of slag were noticed which were directly attributable to the high percentage of the alkaline earths, potash and soda; but as these interesting and useful observations have a distinctively metallurgical bearing, we will not digress from the scope of this paper.

The thought instinctively presents itself whether the old slag dumps of the Western lead smelters may not be used at some future time as a source of the valuable potash salts, and that although there is even now a slow liberation of potash salts going on, yet it is wholly within the power of chemistry to hasten the operation.

The ores from Cripple Creek are found to be the chief source for both potash and soda.

Aside from the physical properties of slags containing much potash and soda, which we have incidentally mentioned to exist, we now find it has likewise a commercial bearing. Chemical literature is filled with instances where purely scientific studies have yielded a rich harvest for the industries of man.

THE TOPIA DISTRICT, DURANGO, MEXICO.

Written for the Engineering and Mining Journal by Frank B. Fowler.

"Topia" is an Indian word, signifying "the half of a gourd," and is descriptive of the topography of the place. The bowl of the gourd contains the town, of some 2,000 inhabitants, and the principal mines, of which there are some 25 within a radius of 2 miles. This bowl is enclosed within a wall of porphyritic cliffs, forming more than a semicircle and 2,000 ft. above the level of the town, which is 5,500 ft. above tide-water. The neck of this half gourd is a "quebrada" extending 50 miles southwest, until the comparatively level coast country in Sinaloa is reached. It is 300 miles westerly across the Sierra Madre from Durango, and 100 miles northeast from Culiacan, the two nearest railroad points.

Topia is the center of an extensive mineral region which has not attained the prominence it deserves for various reasons, chief of which are difficulties of ingress and egress, especially during the rainy season (July, August and September), and high freight rates, all machinery, merchandise, etc., entering on mules or borne by men.

The principal veins run northeast and southwest, near and parallel to one another. The ores are of silver, carrying a high percentage of lead. The lead occurs in the forms of carbonate and sulphide. One of the peculiarities of this region is that all galena ore is rich in silver. From the returns of the first class export ore a little gold is received—from 2 dwts. to 4 dwts. per ton. The gangue is quartz, in granite, porphyry and trachyte, the three formations sometimes occurring within the limits of one mine. The porphyritic, metamorphic sandstone cliffs are of a more recent geologic period, since they interrupt the veins for some distance, the veins recurring, however, beyond these thick upheavals.

These veins were worked superficially by the natives before the Spanish conquest, and afterwards by the Spaniards, who, however, do not appear to have gone below the water level, contenting themselves with the rich carbonates, sulphides and native silver near the surface. It seems that at one time silver was more plentiful than lead, or else the miners had great faith in its efficacy when made into projectiles, since innumerable ounce bullets of pure silver have been picked up in this locality. The carbonates disappear and sulphides take their place as the work goes deeper, the veins becoming more heavily mineralized and the ore more rebellious. None of the mines have been worked deeper than 130 meters (the present depth of the Madrugada), since, owing to the great cost and difficulty in bringing in appropriate machinery, development, with two exceptions, has been confined to tunnels.

Up to within a few years, and since the departure of the Spaniard, work was carried on in a most desultory and primitive way. Even under the Spanish régime the town was twice completely destroyed, once in 1616 by the Tepehuana Indians, and in 1776 by the Cocoyome Indians. Since Mexico has been a republic Topia has endured the raids and sieges of the Apaches and the equally disagreeable levies of the various bands of revolutionists and bandits that infested the country until Senor Diaz became president. Again, many mines have closed down and been allowed to fall in, through the apathy or ignorance of their owners. In spite of all these obstacles, many millions have gone from here to Mexico and to Spain.

The famous mine of Topia, the bonanza of this region, which was called "Tepalcates" (literally, "pieces of crockery," or "fragile fragments") by the Spanish chroniclers and in the Church archives of the Jesuits is now one of the lost mines of history. Since no one escaped when the town was destroyed, these records are derived from other points—as Durango and Culiacan—and are not sufficiently explicit in describing its location, or else use names of localities unknown to the present generation.

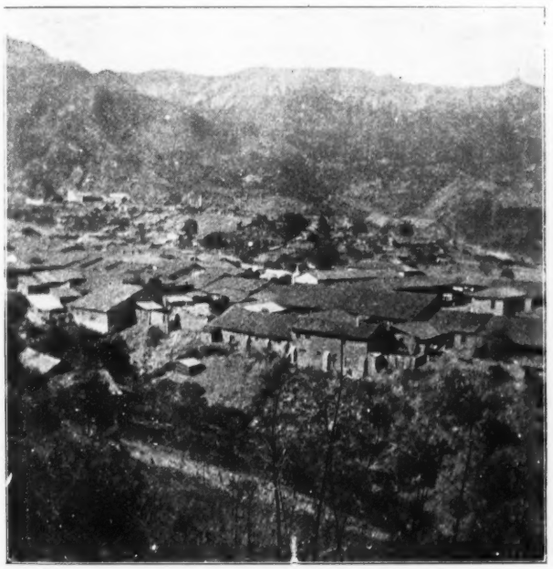
At present the principal producer of the camp is the Madrugada Mine, one of a group acquired by the Gurney Mining and Milling Company, an American corporation, now leased to the Miller & Sibley Mining and Smelting Company, practically the same concern. This property was purchased in 1891 from Senor Lucio Rivera, the most prominent and successful mining man of Topia, for $150,000 and 5 per cent. in shares of the company, capitalized at $1,000,000. It has been a steady producer from the beginning, the average value of the ore being about 150 oz. silver per ton, and the output some $500,000 per year. The "azogues," or second class ore, are reduced here in the company's mill (lixiviation, Russell process, 15 tons daily), and the first grade and ores with a high percentage of lead are shipped to the smelter at Everett, Wash.

This company has had under construction during the past 13 years, intermittently, a two-track tunnel—"Las Victorias"—starting some 600 ft. above the mill and 700 ft. below the lower level of the Madrugada. This is destined as the main developer and outlet of the properties, and when completed will be 5,000 ft. long, cutting all the principal veins of

the camp, over which the company has rights to the extent of 50 meters on each side of the tunnel. It is expected by the miners best informed as to Topia's history, that this tunnel will encounter the famous Tepalcates below a great mass of boulders and detritus tumbled from above (the camp falling rapidly towards the quebrada, 1,300 ft. in 7,000), obliterating all vestiges of former industry. This expectation is furthermore founded upon the fact that from time immemorial the name Tepalcates has been applied to the hills through which this tunnel will pass. It is now being rapidly pushed towards completion, with compressed air drills.

Although the mine has been a steady producer it has not been a source of income to its owners. The reasons seem to be that the mine has had to pay the expenses of the exploitation of other properties; the Victorias tunnel; the mill, which is not self-sustaining; too frequent changes of management; the remoteness of headquarters (Chicago) from the mine, and the difficulty of convincing the company of the impossibility of applying many methods successful elsewhere, the conditions which govern here being so distinct. Mr. Baker is at present in charge.

As an example of the futility of attempting to bend actual conditions to suit a theory, instead of adapting the theory to the conditions, let us cite but one instance. In order to reduce the heavy expense of freighting ore to the mill (about $15,000 a year) the company contracted with the Trenton Iron Company for a cableway from the Madrugada to the mill for $18,000, to be paid upon completion. This was during the early part of last year, the contract calling for completion by August 1st, 1898. It seems the engineer of the Trenton Company did not give due value to the fact that in the matter of timber alone for the supports, all must be rip-sawed by hand in the mountains, and then dragged with much care and labor to its destination, so the time was extended to November



TOPIA, DURANGO, MEXICO.

1st, 1898. Then, instead of having the cable shipped to the port of Altata, Gulf of California, which is but 140 miles from here, 40 of which is by rail and 60 by wagon, leaving 40 only by mules up the quebrada, it was sent by Durango, 300 miles across the ranges of the Sierra Madre; the result is that the cable is just arriving at this writing (May 1st).

Another important group of mines, nine in number, has been closed down now more than two years, owing to bad management running the business into bankruptcy. It is called "Canta Ranas," and has steam plant, stamps, water jacket, lixiviation, amalgamation, electric light, cableway and hoisting works. It is the only steam plant here, the others being run by water; and it is one of the two properties worked by shaft, the other being La Juliana. It is known that these mines have produced in the aggregate more than $5,000,000 in silver. One of the dumps alone has been estimated by competent mining engineers to contain 1,000,000 oz. silver in ore suitable for concentration. These mines will soon pass into the hands of creditors, who will resume operations.

Among other properties here are La Juliana, Santo Nino and San Jose de Peladeros, owned by the successors of Salvador Lopez. The Juliana vein is considered the mother lode of the region, being traced for 40 miles. The Senores Lopez have also a mill and lixiviation plant. Other mines are La Independencia, owned by Mr. Lucio Rivera; La Perla, La Leona and others, owned by the same gentleman and Senor Ramon Espinosa; several mines, mill and lixiviation plant owned by Senor Ignacio Amador.

What is principally needed here is a railroad to the coast. The Miller & Sibley Company has the concession for one, and has made the preliminary survey, but exhibits no undue haste in building. The engineer sent by this company was unfamiliar with the laws, customs and language of the country, bringing all the way from Pennsylvania a chain and leveling rod in feet to a country where the metric system obtains by law; and he took one of the two years granted by the government in preliminary work, covering about 175 miles, 100 of which was in a level country, and the balance following the quebrada. To hold the concession but 8 months remain for the construction of the first 25 kilometers.

It is almost certain that a concentrating plant, 100 tons capacity, 8 to 10 tons output daily, will be installed here during the autumn months, after the summer rains. This will start up a large number of mines of low grade ores that now do not pay to reduce here and much less to ship.

A smelter here would be of great value to the camp and to itself. Time and again responsible metallurgists have visited the camp and made favorable estimates, but always without result, owing principally to high freight rates, the absence of means of getting in or out during the rainy season, and the conservatism, or rather indifference and lack of enterprise and harmony among many property owners.

For its future development Topia needs men with brains and energy. Some capital is also required, but brains and energy are the most needed. It is no place for those who expect to arrive in a Pullman, or can not eat frigoles and tortillas, or who, like our last mining engineer visitor, have never before mounted a horse, nor navigated the sagacious mule.

STEEL MANUFACTURE DIRECT FROM THE ORE.*

By Dimitris Tschernoff.

Many attempts have been made in the past to employ gas in lieu of solid fuel in the blast furnace, and also to work the furnace so that iron or steel may be produced direct from the ore. Up to the present time these endeavors have not had much success, and the writer, therefore,

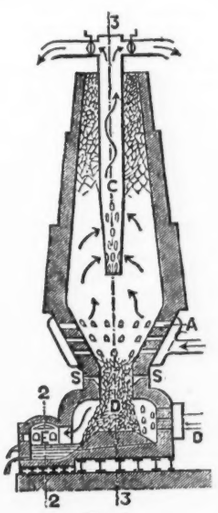


FIG. 1.

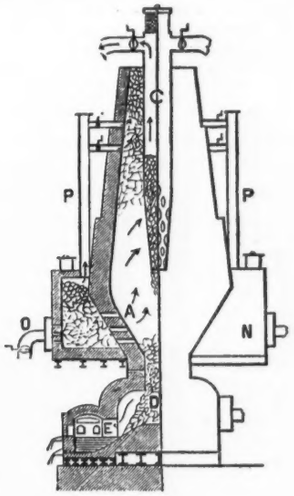


FIG. 3.

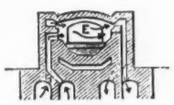


FIG. 2.

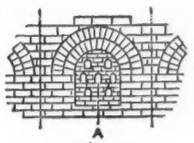


FIG. 4.

STEEL MAKING DIRECT FROM ORE.

ventures to suggest a construction of blast furnace by which these desired ends may be attained. The furnace is designed so that the operations of reduction and of melting take place at different levels, and under the influence of two separate supplies of gas. The gas for reduction of the ore is highly heated, and is led into the furnace at about the height of the carburizing or cementation zone in an ordinary furnace, and thence it flows upward, reducing the ore during its passage. Gas for melting purposes, together with the air requisite for its combustion, is admitted to the hearth of the furnace, where it melts the metal and slag which flow into a separate hearth or receptacle, while the products of combustion are removed by side-ports and a chimney.

The figures show the proposed construction of the furnace in a somewhat diagrammatic fashion, Fig. 1 being a vertical section; Fig. 2, a section on the line 2—2 of Fig. 1; Fig. 3, a part elevation and part section on the line 3—3 of Fig. 1; while Fig. 4 illustrates the construction of the upper gas ports.

Ore and flux, with which charcoal or coke may be mixed, are charged into the shaft, and are subjected to the action of gas supplied at a temperature of from 1,000° to 1,200° C. through the ports a, from the gas-producers, N. This gas flows through the charge, and is withdrawn through openings in the central tube, C. Reduced ore with the flux falls into the hearth, D, where it is melted by air and gas from the ports, d. The flames pass around the mass into the hearth or reservoir, E, where the melted metal and slag collect, and thence the products of combustion are drawn off by a chimney. Slag is tapped off by an upper taphole, and the remaining metal can then be treated on this hearth exactly as is done in an ordinary open-hearth furnace, after which it is tapped and cast. This hearth is shown as quite close to the shaft of the furnace, but obviously it could be placed at some distance and connected to the melting chamber by a covered conduit. The producers, N, may similarly be placed at a distance. Sight holes, s, are provided

* Paper read before the British Iron and Steel Institute, May, 1899.

near the base of the stack, and can be used for stirring the charge or for the introduction of specially fusible fluxes such as fluorspar, if the conduct of the operation calls for such additions.

The nature of the final product, cast iron, wrought iron, or steel, may be controlled by adding carbonaceous material to the charge, and by regulating the amount and the reducing power of the gas at the upper and lower gas inlets. To obtain cast iron, about 5 per cent. of charcoal or coke should be added to the ore, and the temperature and volume of the injected gases must be increased. To produce wrought iron no addition of carbon to the charge is made, and the temperature of the reducing gas must be lowered, but the temperature in the melting-hearth must be raised. In this manner the reduction and carbonization are retarded, and the rate of melting, and therefore of the descent of the charge, are increased. For obtaining more or less mild steel, intermediate measures are taken.

The gas-producers, N, as will be seen in Fig. 3, are arranged on the walls of the furnace between the standards supporting the brickwork of the shaft and the boshes of the furnace. Preferably arches are turned in the main brickwork so as to allow of ready repair of the masonry where the producers are placed, as shown in Fig. 4. Another special feature is the method of working the producers. They are charged with fuel from hoppers on their tops as usual, but pipes, P, are provided to lead moisture, tarry matters, and other products of distillation of the coal to the upper part of the blast furnace. Air is blown in near the base of the producers at O, and the carbonic oxide generated is forced into the furnace through the ports a. These hot gases heat the descending ore and also reduce it, so that when they enter the centre pipe, C, they have a temperature of at least 800° C. Accordingly, they may be regenerated by filling this pipe with fuel, of which the surplus together with the ashes subsequently mixes with the charge. The regenerated gas, enriched if necessary, is utilized for melting purposes in the hearth, or liquid fuel may be used in its place.

ABSTRACTS OF OFFICIAL REPORTS.

Napa Consolidated Quicksilver Mining Company, California.

The annual report of this company, which covers the year ending December 31st, 1898, shows that during the year 32,489 tons of ore were smelted, an increase of 3,839 tons over the previous year. The product was 6,850 flasks of quicksilver, showing an increase of 650 flasks over 1897. The average yield of the ore smelted was 0.8 per cent. The average receipts per flask were $35.89 and the average cost $21.33.

The total receipts from sales of quicksilver were $245,256, and other items amounted to $609, making a total of $245,865. The total expenses, including repairs and new construction, were $146,099, leaving net earnings of $99,766. From this surplus $80,000 were paid in dividends, leaving $19,766 added to surplus.

The charges to expense account included $10,266 for construction and $12,655 for development work. During the year an entirely new hoisting plant was erected which will decrease the cost of the ore, and the outlay was charged to expenses. The development work on the lower levels shows good bodies of ore.

New Idria Quicksilver Mining Company, California.

The report of this company covers the year ending December 31st, 1898. The total receipts from sales of quicksilver were $179,333, to which is to be added $4,966 increase in cash, making a total of $184,299. The total expenses, including repairs and construction, were $87,424, leaving as net earnings $96,875. From this there was paid $70,000 in dividends, leaving a balance of $26,875 carried to surplus. Included in expenses were $8,338 for new construction and $956 for depreciation.

During the year the company's furnaces treated 18,627 tons of ore, or 3,317 tons more than in 1897. The quicksilver produced was 5,000 flasks, an increase of 1,395 flasks over the preceding year. The average proportion of quicksilver obtained from the ore treated was 1.03 per cent. The average receipts per flask of quicksilver were $35.86, and the average expenses were $17.48 per flask. The report says that the new reduction works are producing quicksilver at a low cost, and the automatic handling of the ore contributes largely towards reducing expenses. Development work has been on an extensive scale and has shown very good results, large reserves of ore having been opened up. Tunnels are now being driven at the 500-ft. and 700-ft. levels. It is the intention to start development work in the San Carlos claims this spring.

Aetna Consolidated Quicksilver Mining Company, California.

The report of this company for the year ending December 31st shows that the total receipts from products sold were $124,310, and the increase in cash was $918, making a total of $125,228. The total expenses, including new work, were $91,609, leaving net earnings of $33,619. The company paid $40,000 in dividends, leaving a decrease in surplus account of $6,381. New construction and depreciation amounted to $7,591. The expenses were high owing to the large quantity of new work done.

During the year the furnaces smelted 18,394 tons of ore, an increase of 856 tons. The yield was 3,450 flasks of quicksilver, a decrease of 150 flasks from 1897. The average yield of the ore treated was 0.72 per cent. metal. The average receipts were $36.03, and the average cost $26.55 per flask.

The report says that during the year the 8th and 9th levels continued to produce good ore, and prospecting was carried on extensively on the 10th level. The new Washington shaft has opened up a body of ore of good grade. The expenses were largely increased by the great amount of development work done, specially at the Washington shaft. This work was all charged to expenses; otherwise, the operations of the year would have shown a large surplus.

Broken Hill Proprietary Company, New South Wales.

The report of this company for the half year ending November 30th, 1898, shows that the receipts from products sold amounted to £550,506, and the ore and concentrates on hand to £17,842, making a total of £568,348. Interest and miscellaneous receipts were £3,749, bringing the amount up to £572,097. The mines and mill expenses were £402,012; general and office expenses, £17,209; depreciation, £30,724; total, £449,945, leaving a balance of £122,152 net. The report says: "The sum of £49,971 has been expended in construction, the chief items being on account of the smelting and concentration plants. The usual dividend of £144,000 has been distributed among the shareholders, the directors feeling justified in this course for the reason that the large reserves existing were especially accumulated to meet the contingency, which it was anticipated might arise during the period when the sulphide ores were started to be treated on a large scale."

The work done during the year in the open cut included the removal of 82,145 tons of ore and 130,651 cu. yds. of waste. The underground work shows 399 ft. of shafts, vises and winzes, and 825 ft. of drives and cross cuts. The ore raised was 121,922 tons. The total ore obtained was, therefore, 204,067 tons, which was disposed of as follows: To Port Pirie Smelter, 87,748 tons; to chloridizing furnaces, 38,864 tons; to concentration plant, 77,280 tons; to reserves, 175 tons. The products from the treatment plants were:

	Port Pirie Smelters.	Leaching Plant.	Totals.
Gold, fine oz	6,446	265	6,711
Silver, fine oz	2,266,656	424,890	2,691,546
Lead, tons	14,894	296	15,190
Copper in matte, tons	226	...	226

The refinery treated 16,042 tons of silver-lead (including 26 tons from leaching sulphides), yielding in all 2,716,945 oz. silver, 8,506 oz. gold, 15,116 tons lead and 385 tons antimonial metal.

The following are the amounts and proportions of the different classes of ore and concentrates smelted in the smelting works:

Class of Ore.	Tons Net.	Per Ct.
Lead ore	5,735	5.69
Iron ore	21,945	21.76
Silicious iron ore	11,968	11.87
Kaolin	57,024	56.72
Sulphide ore	319	.32
Raw sulphide concentrates	7,358	7.29
Roasted sulphide concentrates and slimes	15,238	15.11
Miscellaneous ore	1,249	1.24
Total	100,836	100.00

The average extraction per ton of ore treated was: Lead, 14.77 per cent.; silver, 22.48 oz. In addition to the above there were treated 2,372 tons of first matte and speiss, the products from which were: In bullion, 347 tons lead and 139,847 oz. silver; shipping matte, containing 215 tons copper and 51,404 oz. silver.

The directors' report says: "The extension of the refinery plant is now completed, and the result has been satisfactory in the direction of reduced costs of working, which will be still more appreciable when the whole of the plant is in operation. Improvements have also been made in the dore parting plant, whereby decreased working expenses have obtained.

"In the roasting plant the two Ropp furnaces which were in course of erection at the close of the last year have been finished, and the plant, which consists of four furnaces, is a very complete one, and doing excellent work.

"In the smelting plant the new furnaces have been running satisfactorily during the half year, though, unfortunately, owing to the increased fineness of a portion of the oxidized ore, and the larger proportion of concentrates now being treated in the furnaces, the process of smelting has been a slower one, thus decreasing the total quantity of material the plant has been capable of treating, and with a less satisfactory recovery of the metals contained. The consequence of this condition of affairs has been an increased working cost, which, together with the lesser production, has materially affected the financial result of the half year. The whole question has been carefully considered by the technical officers of the company, and experiments are in hand with a view of overcoming the difficulties.

"The trouble which arose in connection with the water supply, and which was giving the directors some anxiety, has to some extent disappeared, the company having received the assurance of the South Australian Water Department as to plentiful supplies being available from sources other than Beetaloo in the immediate future. The additional expenses incurred through the largely increased cost of the water have been considerable during the period dealt with.

"The metal market has shown a substantial advance since the issue of the last report, and the whole of the output has been realized at higher rates than that for the previous six months. The amount of lead disposed of for the East indicates a very decided improvement on the corresponding period of the previous year, and more especially is this the case with regard to Japan, where the trade has increased rapidly.

"Nothing of special importance has occurred during the half year either in regard to the surface or underground working of the mine, though the improvement in the grade of the lode material referred to in the last report still continues. The directors have now completed a contract with Messrs. Baxter & Saddler for an extension of the opencut a further depth of about 50 ft., which will carry this work to approximately the lowest point it can advantageously be extended.

"The duplication of the concentration plant to a capacity of 10,000 tons has been authorized by the directors, and the work is now in hand, the general manager being of opinion that the close of the current half year should see it well advanced toward completion. The crushing plant, which, as originally designed, was found to be of insufficient capacity for the requirements of the mill, has been increased, and the alteration has proved satisfactory both as to the quantity of ore treated and the results attained.

"The financial results of the half year's work have been somewhat detrimentally affected by the reduced smelting capacity at Port Pirie, for the reasons previously stated, and also on account of the many adjustments and modifications in the recently erected plants, which must of necessity arise in bringing new machinery and plants into satisfactory working order. The rearrangement of work consequent upon the transference of all smelting operations to the seaboard, and the erection and extension of other plants, has entailed considerable interruption to ordinary routine work. At some additional cost a heavy reserve of ore

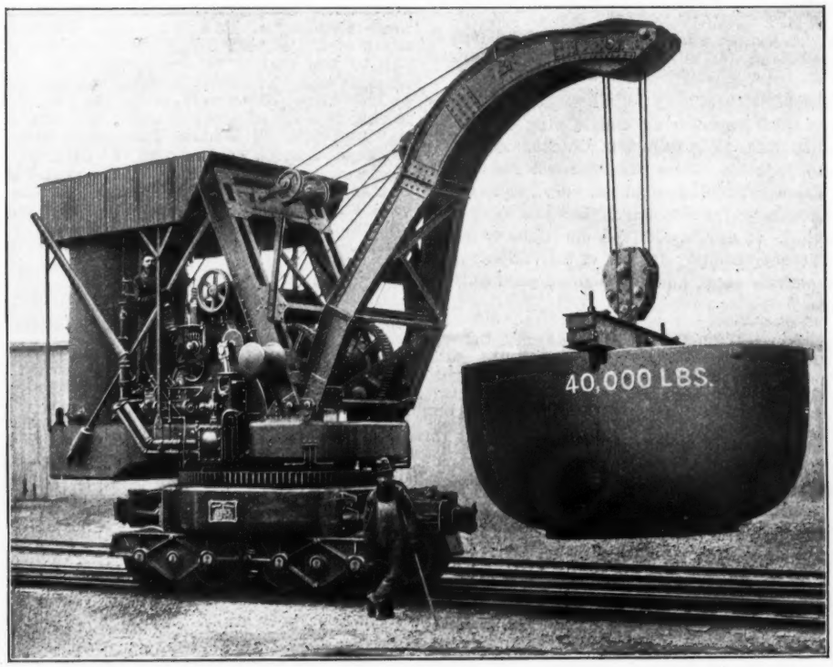
has been stocked at Port Pirie, in order to meet the requirements of the South Australian Railway traffic, and this being taken into account and valued at considerably under the cost of raising and placing at the smelting works, also affects to some extent the half year's work."

THE BROWN LOCOMOTIVE CRANE.

The accompanying illustration shows a locomotive crane of a very serviceable type, built by the Brown Hoisting and Conveying Company, of Cleveland, Ohio. This crane has a capacity of 20 tons lift, and is provided with a variable radius boom, the extreme radius of which is 20 ft. 6 in. In order to distribute the load well, the crane is mounted on equalizers. The base frame is of cast iron, and this is carried on cast steel trucks, so arranged as to take curves very easily. The machine shown in the engraving is adapted for standard railroad gauge, 4 ft. 9 in.; but they can be made for any gauge desired, up to 7 ft. or 8 ft.

The boiler is upright and has a steam pump for feed as well as an injector. It has the necessary engines and motion for hoisting, rotating the bed to bring the arms into position, and for moving the trucks. The general arrangement of the machinery is very well shown in the engraving.

The truck is provided with Gould automatic couplers, so that it can be attached to a freight car when desired. It is built complete with half cab, couplers and variable radius gear. The shipping weight, in complete order, is 120,500 lbs.



BROWN 20-TON STANDARD LOCOMOTIVE CRANE.

The use of the locomotive crane is too well established now to need any advocates. It is indispensible in shops, mills and other places where heavy weights are to be lifted and moved; and it could be applied to great advantage in quarry work in many places. In smelting works, blast furnaces and similar plants it is of great service. The Brown type is compact and convenient, the general design being an excellent one.

IRON PRODUCTION IN GERMANY.—The output of the German blast furnaces for the month of March was the largest ever recorded in one month. It was 716,725 metric tons, showing an increase of 91,595 tons over March, 1898. For the three months ending March 31st, the total production was: Foundry iron, 354,617 tons; forge iron, 426,884 tons; Bessemer pig, 155,116 tons; Thomas (basic) pig, 1,077,141 tons; total, 2,013,758 tons. This compares with a total of 1,809,525 tons in 1898, showing an increase this year of 204,233 tons, or 11.4 per cent. If production be maintained at the present rate, the total for 1899 will reach a point somewhat over 8,000,000 tons, or very close to the production of Great Britain.

THE LARGEST ZINC WORKS.—The report of the Vieille Montague Zinc Company for 1898 shows that the company's works made during the year 69,351 tons of spelter, of which 68,745 tons were converted into finished forms in the rolling mill and other mills. The works also produced 8,894 tons of zinc white. The financial results were good, the company having paid dividends at the rate of 45 per cent. on the stock. There was some increase in the cost of labor owing to the general demand for men at the coal and other mines in Belgium. The ores also cost somewhat more, owing to the demand for them. Nearly all the zinc ores used by the company are imported. With a view to replacing some of its mines which are being worked out, development has been pushed on the property in Sweden, which was acquired some time ago. At the mines at Nenthead, in England, which the company bought last year, operations are being extended with a view to increasing the yearly production of ore from 4,500 to 20,000 tons.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

RIGHT OF INJUNCTION.—Injunction will lie to restrain the taking of ore from one's mining property, the trespass being of a continuing character.—Halpin vs. McCune (78 Northwestern Reporter, 210), Supreme Court of Iowa.

MECHANICS' LIEN COVERS MILL SITE ONLY.—Under the law of Colorado (1893, page 320, section 7), extending a mechanics' lien over so much of the lands on which the buildings may be erected as may be necessary for the convenient use and occupation of such buildings, the lien for a stamp mill covers the mill site only; and not the lode mining claims from which the ores to be worked are obtained.—Colorado Iron Works vs. Taylor (55 Pacific Reporter, 942), Court of Appeals of Colorado.

WHEN IMPROVEMENTS BY PURCHASER BIND SELLER OF MINING PROPERTY.—Under an option of purchase, for mill site and lode mining claims, certain improvements were stipulated for, to be made after the first payment. The assignee of the purchaser made an additional contract, which recited that he had elected to proceed with the purchase under the option, and in accordance with its terms. The court held that, the first payment having been made, the agreement became a positive contract of sale, and therefore the purchaser, in proceeding with the improvements as authorized by the contract, acted as the agent of the seller, and notice to the purchaser of a mechanics' lien arising out of the work bound the seller.—Colorado Iron Works vs. Taylor (55 Pacific Reporter, 943), Court of Appeals of Colorado.

EMPLOYEE RESPONSIBLE FOR OBSERVANCE OF CONDITIONS.—An employee of intelligence and mature years, knowing the manner in which the work in which he is engaged is conducted, and the condition and position of the appliances used, is bound to apprehend the dangers of his employment; especially where he has had 10 years' experience on coal boats, and worked in his present position for four months in unloading coal from vessels, for which reason he will be held to have assumed the risks of the employment, and the employer, who has properly selected and instructed a man to give notice to other employees of the movements of the apparatus in unloading coal from a vessel is not responsible for the failure of such other employee to give warning.—Portance vs. Lehigh Valley Coal Company (77 Northwestern Reporter, 875), Supreme Court of Wisconsin.

WHAT IS NOT EVIDENCE OF NEGLIGENCE BY MINE OPERATOR.—A coal miner, in an action against the owner of the mine in which he worked to recover for injuries alleged to have resulted from an explosion of gas following his striking a match to light his fuse, testified that he tested the locality fifteen minutes before, and it was clear of gas, and also that the presence of gas in sufficient quantity to cause an explosion would have been indicated by the flame of his lamp. The court held that this was sufficient to support a verdict for the owner, as the facts did not indicate that he had negligently permitted the accumulation of standing gas, as alleged, but were only consistent with the theory that the gas suddenly escaped from some part of the surrounding wall, and that the negligence, if any, was on the part of the miner, in not observing his lamp immediately before striking the match.—Sommers vs. Carbon Hill Coal Company (91 Federal Reporter, 337), United States Circuit Court.

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered.—Editor E. & M. J.)

Mica.—Will you tell me where I can find a market for mica like the enclosed sample? Also its price per ton.—A. S. B.

Answer.—As to the market for mica, prices, etc., see the "Engineering and Mining Journal," May 6th, 1899, page 534.

If your deposit is like the samples you send, there is no market for it. It is not true mica at all, lacking the elasticity and cleavage which characterize that mineral. It is irregular in thickness, of poor color and brittle, and could not be used for the purposes to which mica is usually applied.

As far as can be judged from the small specimens sent, it is either one of the so-called "brittle micas" or a form of massive talc. In either case it has no commercial value.

Molybdenite Deposits.—1. Can you give me any information about molybdenite deposits?—A. G. H.

2. I have a client who has discovered a large deposit of molybdenite, in Washington. What is the market for this ore and for molybdenum? Who are the dealers?—G. T.

Answer.—This question has been practically answered several times in our previous issues. See the "Engineering and Mining Journal," July 9th, 1898, page 42; August 13th, 1898, page 192; October 8th, 1898, page 430; November 5th, 1898, page 552. Also "The Mineral Industry," Volume VI, pages 485-486. There is nothing to add of very recent date. The small demand for molybdenum which was started last fall by orders from abroad has almost subsided. In any case, it was not likely to grow to any large dimensions. The only commercial use of any importance thus far found has been in making steel, and for that purpose only a very small percentage is used.

Losses in Milling.—In milling ores containing gold and silver there is a loss which seems mysterious. The product obtained in the mill added to the assays of the tailings, fails ever to equal the assay of the crude ore. It may be due to chlorides, slimes or other matter carried away by the waste water and not caught with the tailings. Can you suggest a remedy? Has there been any method adopted in similar cases to overcome the difficulty? Are there any suggestions in recent works on the subject?—J. W. M.

Answer.—The difficulty mentioned is not a new one, but has been experienced in many places. It would be impossible to suggest remedies without a more definite knowledge of the nature of the ore, the milling processes and perhaps some other points.

It is very probable that many of our readers may have encountered the same difficulty as is mentioned. Some account from them of their methods would be very acceptable, and we hope that we may receive records of experience on this point.

As to literature, we might suggest a careful reading of the treatise on "Amalgamation of Gold Ores," by Mr. Louis Janin, Jr., in "The Mineral Industry," Volume III.; and "Variations in the Milling of Gold Ores," by T. A. Rickard.

Working Low Grade Ores.—Where can I secure information regarding the treatment of low-grade, free-milling ore, including the expenses of mining and milling, cost of labor, supplies, and also information as to the different machinery, and the number of stamps necessary to work ore paying about $4 a ton at a profit?

Also, where I can secure detailed copies of the reports of the Alaska-Tredwell, Alaska-Mexican, Homestake and other low-grade, free-milling mines?—P. H. C.

Answer.—There are several works which you can consult with advantage. In the different volumes of "The Mineral Industry" you will find much information. We might suggest T. A. Rickard's "Stamp Milling of Gold Ores." A great deal can be obtained from the catalogues of the mining machinery builders—such as Fraser & Chalmers, the Union Iron Works, Denver Engineering Works and others, whose names you will find in our advertising columns. You must always remember that cost of mining and working ores will vary widely with locality, as the prices of supplies and the wages of labor will depend upon the place where the mine is, and its surroundings.

As to the reports of the companies mentioned, you will find very full abstracts of them, with tables of costs (wherever it is possible to give them), by referring to the files of the "Engineering and Mining Journal."

Coal Tar and Petroleum Distillation.—1. What manufacturers in America make stills for distillation of alcohol, coal tar and crude petroleum?

2. What are the names of the firms that distill most of the coal tar?

3. Where could one obtain daily bulletins as to the prices ruling for oils, chemicals, etc?—H. R. C.

1. There are few or no special manufacturers of distilling apparatus such as you mention. The chemist or engineer usually designs the distilling plant, and it is made by the machine shop or contractor in the same way as any other ordered work. In Oil City and Erie, Pa., there are several firms which have done this kind of work. The Standard Oil Company, the largest user of stills for crude petroleum, has its own shops and does the greater part of its own work.

2. Among the firms which make and deal in coal tar products we might mention the Barrett Manufacturing Company, whose main office is at 290 Broadway, New York; the New York Coal Tar Chemical Company, 10 Warren street, New York; the Warren Chemical Company, 81 Fulton street, New York; M. Ehret, Jr. & Company, 423 Walnut street, Philadelphia.

3. The only paper which gives daily quotations of oils, chemicals and the like is the "Journal of Commerce and Commercial Bulletin," published in New York.

IRON WORKS IN ALSACE-LORRAINE.—According to the London "Iron and Coal Trades Review," the number of blast furnaces erected in Alsace-Lorraine is relatively less than might be expected in view of the great resources of this region. One explanation of this is the iron-bearing lands of value have practically been taken up by existing firms, who are not willing to allow competitive works to be established, while the depth of the mineral workings causes the ore to be rather more difficult to win than it is, for example, in the neighboring iron-field of Luxembourg. The want of water has been another drawback, especially on the plateau of Autnetz, where the best ore beds are found. The following is a list of the blast-furnaces now erected in Alsace-Lorraine: Hayange, MM. de Wendel, 7 furnaces; Moyeuvre, MM. de Wendel, 7; Rodauge, Societe de Rodange, 2; Ottange, Societe de Rumelange, 2; Mezieres, Lamarche et Cie, 2; Audun-le-Tiche, Acieries d'Angleur, 2; Rombach, 2; Uckange, MM. Stumm, 2 furnaces. Another establishment, to be known as the Societe de Hauts-Fourneaux de la Paix is now being laid out on the south of the province, near the Feutsch, and not far from the well-known works of Hayange, belonging to MM. de Wendel.

PATENTS RELATING TO MINING AND METALLURGY.

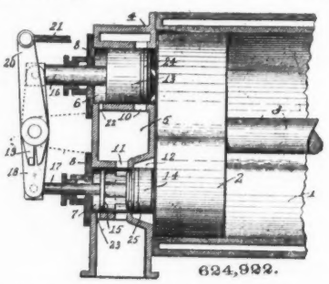
UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending May 16th, 1899.

624,900. METHOD OF MANUFACTURING ARTIFICIAL STONE. Thomas W. Barber, London, England. Assignor to Lewis Peter Ford, same place. The process consists in first submitting the materials to a vacuum, to the action of hot water under pressure, then to the action of steam under high pressure and removing the water, then again submitting the materials to a vacuum while maintaining them at a suitable temperature till dryness is reached.

624,922. VALVE FOR COMPRESSORS. Frederick W. Gordon, Philadelphia, Pa. A combination of a compressor-cylinder, a pair of ported valve-cylinders each having one end in free communication with the compressor-cylinder and its other end in free communication



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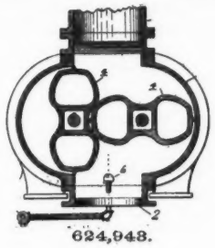
with the discharge-chamber of the compressor, a closed piston-valve in each of the valve-cylinders, a rocker connected with the valves to cause them to move in unison in opposite directions, and a tappet-arm adapted to move the valves in closing direction, the valves and rocker being so arranged that one of the valves serves as a fluid-pressure motor for opening both valves.

624,943. ROTARY BLOWER. Edgar D. Johnston, Connersville, Ind., Assignor to the P. H. & F. M. Roots Company, same place. Combination of a casing having a bottom fluid-inlet and a fluid-outlet, pair of intermembering impellers mounted within the casing between the inlet and outlet, a pipe leading to the casing from a source of supply of liquid under pressure, and a spray-head connected with the pipe and disposed within the casing below the impellers and above the fluid-inlet and adapted to spray and diffuse liquid upwardly into the uncompressed fluid on its way to the impellers, whereby the fluid-inlet serves also as the outlet for the rejected liquid.

624,945. PORTABLE DEVICE FOR THAWING FROZEN GROUND. Louis L. Kendall, Williamsburg, Ky. In combination, the supply-tank, and burner-battery flexibly connected therewith, the alined handles fixed to the battery and a controlling-valve fixed intermediate one of the handles and the burner.

624,956. METALLIC TUBING. Thomas Midgley, Columbus, Ohio. Assignor of two-thirds to George C. Urlin and Lewis Fink, same place. Tubing composed of multiple concentric metallic sections, metallically joined together and the inner surface coated with soft metal such as brass.

624,972. PROCESS OF PACKING CAUSTIC ALKALIES. Heinrich Precht, Neustassfurt, Germany. Assignor to the Salzbergwerk Neustassfurt, same place. The method consists in casting caustic alkalies into blocks, placing such blocks within the cask out of contact



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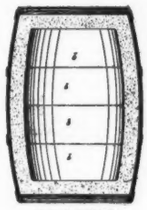

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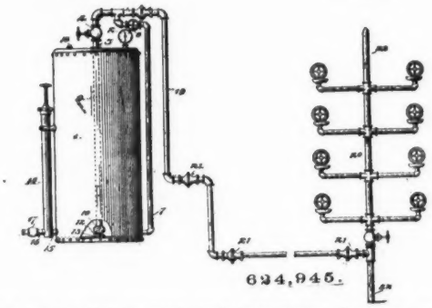
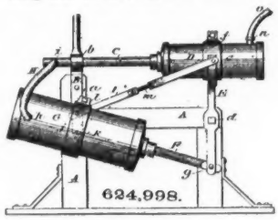


624,945.

with the walls thereof, and interposing between such walls and the body of the blocks an additional body of an alkaline carbonate.

624,998. COMPOUND AIR COMPRESSOR. George W. Wallick, Sturgis, Mich. Combination with a cylinder having solid piston and rod and inlet check-valve, outlet-tube and opening the clamp encircling the cylinder pivoted to lower end of lever a smaller cylinder having hollow piston-rod and valvular piston and inlet-tube and outlet check-valve, the adjustable clamp encircling cylinder of the lever fulcrumed on frame with the upper jaw connected to clamp and supporting cylinder and the lower jaw pivotally secured to the piston-rod, a flexible pipe connecting cylinder to piston-rod.

625,014. APPARATUS FOR ELECTRICALLY IGNITING MINERS' SAFETY LAMPS. William Best, Morley, England. Assignor to Ackroyd & Best, Limited, same place. A miner's lamp having a metallic base, a wick and means for adjusting the same, a central conductor and means for insulating the same, in combination with a ring for receiving the base of the lamp, a central spring-contact,



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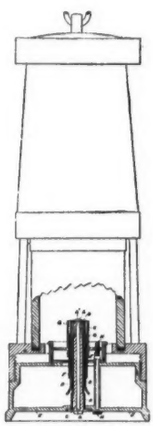

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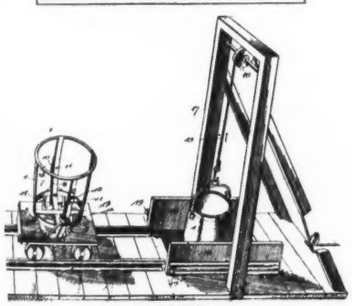


625,035.

an induction-coil and connections therefrom to the central contact and to a contact for the lamp-base, a push-switch actuated by the lamp for closing an electric circuit to the primary of the induction-coil so that the spark from the induction-coil is directed across the wick to the metal of the lamp.

625,045. BATTERY SOLUTION. Henry Blumenberg, Jr., New York, N. Y. The solution consists of a chlorate and a bisulphite of an alkali metal or alkali-earth metal in approximately equal proportions, and mixed with water.

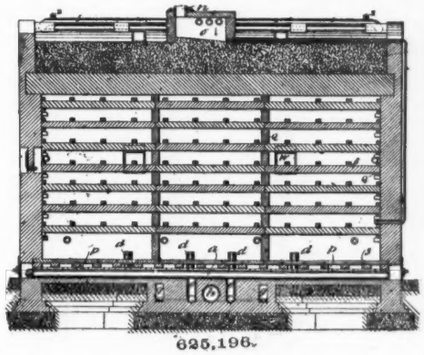
625,035. BUCKET-CAGE FOR MINING CARS. Willis Knap, Salt Lake City, Utah. Assignor of one-half to Orlando W. Powers, Daniel N. Straup and Joseph Lippman, same place. A device comprising a car, a support mounted on the car and having a vertical pivot, and a bucket-receiving cage mounted upon the support and arranged to be tilted to discharge the contents of a bucket.

625,079. PROCESS OF PRODUCING HEATING AND ILLUMINATING GAS. William Young, Peebles, Walter R. Herring, Edinburgh, and Alexander Bell, Peebles, Scotland. The process consists in decomposing steam and distilling or carbonizing coal or oil or like substances in an internally and intermittently heated revolving retort or producer, such revolving retort or producer being charged with coke, coal or other carbonaceous combustible, and the charge of carbonaceous matter, and the walls of the retort or producer being heated up by the combustion of a part of the carbonaceous matter by a blast of air, while the retort is slowly rotated so as to turn over the combustible and present fresh surfaces of the ignited combustible to the air-blast, and also fresh surfaces of the walls of the producer to the combustion products.

625,085, 625,086. CONVEYOR FOR UNLOADING VESSELS. Owen J. Conley, New York, N. Y. The combination of a vessel, a conveyor located in a compartment beneath the entire load carried by the vessel, an elevator adapted to receive the material discharged from the conveyor and elevate the same; a second conveyor adapted to receive the material from the upper or delivery end of the elevator, the second conveyor being pivotally secured to the deck of the vessel in such manner as to adopt its free or delivery end to be moved in any desired direction, together with means carried also by the vessel for elevating the free or delivery end of the second conveyor to a point above the delivery end of the elevator, whereby the material carried by the vessel may be elevated and unloaded at various heights and angles.

625,140. MACHINE-DRILL SHARPENER. James J. Brossoit, Butte, Mont. A drill-sharpener comprising a pair of swages for engaging the shank at opposite sides, one of the swages having a reciprocating movement, a reciprocating end swage at an angle to the pair of swages, and a cylinder mounted to swing and having a reciprocating piston arranged for connection with either of the reciprocating swages.

625,196. WHITE-LEAD CHAMBER. Henry G. Percival, London, England. A chamber having an air-space beneath the floor and air-spaces, communicating therewith, in the walls, heating means for the air in the spaces, a mixing chamber for air and carbonic anhydride beneath the floor, communicating with the interior of the device,



625,196.

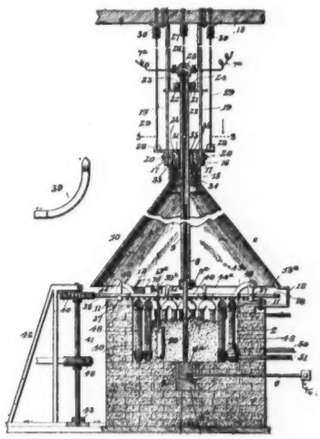
air-conduits leading through the walls of the chamber, communicating from the outside with the interior, and with the spaces in the walls, means for controlling the passage of air through the conduits, and valved discharge pipes leading from the interior of the chamber.

625,212. PULVERIZING OR GRINDING MACHINE. Sidney Straker, London, England. Assignor to the Central Cyclone Company, Limited, same place. Combination with a reducing-chamber of a relief-chamber arranged on one side of the reducing-chamber, its open top communicating with the upper part of its lower end with the interior of the reducing-chamber within the periphery of the latter, a separating-chamber above the reducing-chamber and relief-chamber, a baffle-plate in the lower part of the separating-chamber arranged to deflect the upward current of air laterally and away from the open top of the relief-chamber, a second baffle-plate above the first and inclined in the opposite direction, to deflect the upward current back over the relief-chamber, and means for withdrawing air through a passage at the top of the separating-chamber.

625,213. CONVEYOR. Pleasant L. Suell, Horse Creek, Ala. Combination with a moving chain of a carrier pivoted directly thereto, and braces each pivoted at one end to the carrier and adjustably and detachably pivoted at its other end to the chain.

625,251. METHOD OF AND APPARATUS FOR MANUFACTURING GAS. Hilliard Eldridge, Daniel J. Clark and Sylvain Blum, Galveston, Tex. A plant comprising an electrical furnace or retort having means for producing an electric arc therein, a carbureter, an acetylene-gas generator operatively connected with the carbureter for discharging acetylene gas into a hydrocarbon liquid contained within the carbureter, and heating and fixing coils or pipes situated within the electrical retort or furnace and operatively connected with the carbureter to receive the commingled hydrocarbon vapors and acetylene gas therefrom.

625,252. ELECTRICAL FURNACE. Hilliary Eldridge, Daniel J. Clark and Sylvain Blum, Galveston, Tex. Combination with an inclosed



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furnace-chamber, and a cathode therein, of a vertically-adjustable hood arranged over the furnace-chamber.

625,294. CARBURETER. William J. Egan, Milwaukee, Wis. A carbureting apparatus, comprising a reciprocating air supported and actuated chamber arranged to exert a continuous pressure upon the air therein, a generator located in the chamber and in communication therewith, a gas-supply pipe leading from the generator, and means for automatically maintaining a supply of air in the chamber, whereby the pressure of the chamber expels the air continuously through the generator at a uniform pressure.

625,299. MATCH-PASTE COMPOSITION. Gustav Hackel, Vienna, Austria-Hungary. Assignor to Carl Kastner, same place. Consisting of bichromate of potash, gum-arabic, amorphous phosphorus, chlorate of potassium, a mineral coloring-matter, hyposulphite of lead, and water.

PERSONAL.

Mr. O. P. Posey is again in Utah looking after his varied mining interests there.

Mr. Bernard Macdonald is now in the Slocan Mining Division of British Columbia.

Dr. F. M. Simonds, of New York City, has been examining a gold mine at Central City, Colo.

Mr. H. Pengelly has been appointed superintendent of the W. Y. O. D. Mine at Grass Valley, Cal.

Mr. John E. Rothwell of Denver, Col., builder of chlorination gold mills, has been visiting Cripple Creek, Colo.

Major J. E. Jackson is looking into the merits of mining properties around State Line, in southwestern Utah.

Prof. W. P. Blake of Tucson, Ariz., expects to visit several northern cities, arriving in New York about June 7th.

Mr. Franklin Leonard, of New York, president of the Sutro Tunnel Company, was recently in San Francisco on business.

Mr. Patrick Holland has resigned his position as foreman at the Empire Mine, near Grass Valley, Cal., and is now in San Francisco.

Mr. C. Algernon Moreing is president of the St. Lawrence Power Company, which is establishing large works at Massena, New York.

Mr. Hartwig A. Cohen, formerly at the head of Captain De La Mar's staff, arrived in Salt Lake City 10 days since. He gave some time to Bingham.

Mr. R. C. Chambers left San Francisco for Salt Lake City, recently. His visit to the Pacific Coast related in part to resuming operations at the Daly, Park City, Utah.

Mr. E. W. Johnson, metallurgist, sailed May 27 for England, where he is offered the management of the Fry Process Zinc Lead Works, on the Manchester Canal.

Col. George W. E. Dorsey is expected this week to leave Nebraska for Utah, where his extensive mining interests will receive his attention during the greater part of the summer.

Mr. J. H. Lukster, a Rossland mining engineer, is now in the Boundary country of British Columbia, examining mining properties for Montreal and English capitalists.

Mr. C. H. Macintosh, who is about returning to Rossland, B. C., from England, has been appointed an advisory agent of the London & Globe Finance Corporation, Limited.

Mr. Harry C. Bacorn has returned to Salt Lake City, after more than a year's absence in Mexico. He has been connected with the Purisima Mine, near San Jose De Gracia, Sinaloa.

Mr. James Long, Jr., manager of the Breckenridge Mammoth Mines, Gold Mountain District, Utah, has returned from New York. He predicts a prosperous season for Gold Mountain.

Mr. Ralph Nichols was very pleasantly entertained at Salt Lake City on May 27th by old friends, some of whom were associated with him at De La Mar, Nev. He is on his way to Australia.

Mr. C. H. Thompson has resigned his position as chemist and chief engineer of the New River Mineral Company to accept a similar position with the Empire Steel Company at Goshen Bridge, Va.

Mr. Peter White, of Marquette, Mich., with Senator Wolcott, of Colorado, and Senator Clark, of Montana, will make a collection of copper specimens from the mines of this country for the Paris Exposition.

Mr. John Lawson, for many years with the Minnesota Iron Company, and lately manager of its Auburn Mine, on the Mesabi, has resigned and will go West. His successor is H. B. Howland, late chief engineer of the Fayal.

Mr. Victor M. Clement, the distinguished mining engineer, who has been managing the Delamar properties in Utah, sailed this week for London. He expects to go to the Transvaal for a short professional visit before returning to this country.

Mr. Frank Nicholson, the well-known mining engineer, who has for some months been in Joplin, Mo., examining and managing properties for clients, has returned East and is at present in Boston, but is intending to make New York his permanent headquarters.

Mr. R. H. Terhune, late superintendent of the Hanauer Smelter, Salt Lake City, was in Denver last week. His visit to Colorado was on business connected with his profession as mining engineer. For the present his headquarters will be at Salt Lake City.

Mr. Barry Searle, a well-known mining engineer, who was formerly connected with the El Callao, in Venezuela, and more recently the manager of several of the large mines in the Transvaal, arrived at New York City recently and will remain here for some time.

Mr. Victor C. Heikes, honorary special agent of the Department of Mines and Metallurgy for the Commissioner General of the United States to the Paris Exposition of 1900, completed his work in Utah, June 1st. The 2 mines which most impressed him are Utah Consolidated and Silver King. He is assured of a full and characteristic representation of Utah's mineral resources. He left Salt Lake City for California, though he will probably give a few days to Nevada en route.

OBITUARY.

The Earl of Wharncliffe died in London on May 13th. Of an ancient and wealthy family, and in his youth a notable sportsman, the late Earl became one of the best known business men in England. He was owner of much of the land around Sheffield and personally directed operations at his collieries, iron works, coke ovens, etc. He was principal owner of the Thorncliffe Iron Works and Collieries at Sheffield, carried on by the firm of Newton Chambers & Company, Limited, and was for many years director and vice-chairman of the Manchester, Sheffield & Lincolnshire Railway, which, since its extension to London, is called the Great Central, and since the retirement of Sir Edward Watkins had been chairman of the company. The Earl was 71 years of age.

SOCIETIES AND TECHNICAL SCHOOLS.

Yale University.—Prof. Arthur Hadley succeeds Timothy Dwight as president of the University. Prof. Hadley is a well-known writer on sociology and political economy. Franklin B. Dexter, secretary of the corporation, and Henry W. Farnham, treasurer of the university, have resigned.

Leland Stanford University.—Mrs. Mary J. Stanford, widow of Senator Stanford, has conveyed to the University the bulk of all her wealth, comprising stock in various companies and ranch property in San Mateo, Colusa, Tehama and Santa Clara counties, California. The value of the gift is estimated at $10,000,000.

Colorado State School of Mines.—The senior class, consisting of 19 students, with 2 professors, recently spent 4 days in the Cripple Creek District. Through the courtesy of the mine owners the party was enabled to visit a number of mines and other points of interest. Among the mines visited were the Gold Coin, Elkton, Moon-Anchor, Half Moon and others. The party were also shown through several of the mills, power plants, etc.

Washington University.—At a meeting of the board of trustees in St. Louis, President Brookings announced that he had secured a gift from Samuel Cupples, in addition to the mechanical and electrical engineering building, of a building for civil engineering and architecture to cost $100,000, and $150,000 towards the endowment of the school of engineering and agriculture, thus making the aggregate gifts of Mr. Cupples within the last 60 days $400,000. He also announced the gift of a dormitory to cost $100,000 from Mrs. John E. Liggett.

Lehigh University.—This well known institution, at South Bethlehem, Pa., has issued a little pamphlet announcing the courses of instruction to be given in its Summer School from July 5th to August 16th. The courses, which are open to all duly qualified persons, include instruction by professors and instruction in the departments of Civil Engineering, Physics and Electrical Engineering, Chemistry, Mathematics and Astronomy, English, Greek, Latin, Modern Languages, History and Economics.

The University also issues a little circular giving the subjects for theses presented by candidates for degrees in June, 1899. Of the 59 theses 16 are for the degree of civil engineer, 14 for the degree of mechanical engineer and 9 for the degree of electrical engineer.

United Correspondence Schools.—The Institute for Home Study of Engineering, of Cleveland, has been incorporated with the United Correspondence Schools of New York City. The consolidation will result in great benefit to the students of the Cleveland Institute, as all contracts will be carried out and students will have the advantages resulting from the large capital, increased facilities, and the improved and perfected courses of the United Correspondence Schools. The system of instruction employed by these schools has been gradually developed and improved under the able direction of Mr. F. W. Ewald, whose many years of experience in teaching by correspondence has enabled him to perfect courses of instruction which are thorough, complete, and in accordance with modern practice. The remarkable success of the United Correspondence Schools is the result of the efficiency and practical value of their courses, and the large number of students enrolling in the various branches of study has made it necessary to greatly enlarge the home office and increase the staff of expert instructors.

Engineers' Club of Philadelphia.—At a meeting on May 20th 46 members and visitors were present. A topical discussion upon "The Utilization of Wastes" was opened by Mr. John Birkinbine, who enumerated most of the important utilizations which occur in the industries allied to engineering, including the use of scrap-iron, tin-plate, the volatile matters given off in producing charcoal and coke, cotton seed, cornstalks, blast-furnace cinders, shearings, punchings, filings, the by-products from the manufacture of gas and petroleum, the waste heaps from coal mines, etc.

The details of many of these utilizations were discussed by Messrs. Max Livingston, Thomas C. McBride, James Christie, Harrison Souder, J. Kay Little, S. E. Fairchild, Jr., and others.

Mr. Birkinbine exhibited and described a number of lantern slides showing the plans for the buildings of the Philadelphia Exposition to be held next autumn, and photographs of their present condition. There was some discussion upon the location of the buildings and the arrangements that would be made for reaching them by rail.

INDUSTRIAL NOTES.

The Phœnix Bridge Company, of Phœnixville, Pa., is to build for the Imperial Railway, of Japan, a bridge in 6 spans, the highest 130 ft., of a total weight of over 500 tons.

The aluminum wire, 150,000 lbs., to be furnished by the Pittsburg Reduction Company for the Northwestern Elevated Company, of Chicago, will be used as feed wires.

The Union Gas Engine Company of San Francisco, Cal., has received an order from the Yellow Aster Mining Company for a 130 H.P. engine to be used on the property at Randsburg, Cal.

Carl Binder, of Chicago, has secured from Fraser & Chalmers all the rights of that firm to manufacture and erect in this country the "Otto aerial wire ropeways" for mining or industrial use.

The Phœnix Crucible Works, at Taunton, Mass., were recently bought by the American Smelting and Refining Company from the former owner, Henry D. Atwood, who has been engaged to continue the manufacture of retorts and crucibles.

Edward Robinson, proprietor of the Wells light, New York City, returned from England on the steamer "Umbria" a few days ago, after a pleasant trip, taken partly in the interest of the Wells light business and partly for pleasure. During his absence abroad 1,500 of the Wells lights were sold to the Russian Government, for use on the Russian railroads, in that country.

The Tubular Despatch Company, owning and operating the Pneumatic Mail Transmission Tubes in New York City, has placed an order for 3 duplex Corliss air compressors with the Pneumatic Supply and Equipment Company of New York, recently organized to install complete compressed air plants. The capacity of each compressor is in excess of 1,300 cu. ft. of free air per minute, and the entire cost of the installation is understood to be over $12,000.

It is said that the Stauffer Chemical Company of San Francisco has decided to establish a cream tartar factory in New York City. This move is said to be the outcome of the rivalry between it and the American Cream Tartar Company of New York. John Stauffer, the practical superintendent of the Stauffer Chemical Company, with Mr. John H. Wheeler, vice-president, in New York, will have charge of placing the machinery in the new factory, which will have a capacity of 150,000 lbs. per month, that can be increased at a slight expense to double the capacity. European argols will be used in the manufacture of the cream tartar in the East.

The Merralls' Mill Company of San Francisco, Cal., reports that it is busy getting out machinery for different parts of the country. At present it is finishing up one of its No. 2 tension quartz mills for P. A. Wagner of San Francisco, to be used in Trinity County, Cal.; also one of its 3-stamp mills, triple discharge, 1,200 lb. stamps, for T. J. Parsons, president Del Monte Milling Company, of San Francisco, as well as a 30-ton cyanide plant (Merralls' system). This plant will be erected for the Alta Mining Company of Sierra County, Cal. Also it is building one of its very large roll breakers for Dr. Schloesser, to be used to crush to an eighth of an inch mesh, dry, for a cyanide plant in Lasson County, Cal.

The Bullock Electric Manufacturing Company, of Cincinnati, will ship soon to England a 25 H. P. generator and two 30 H. P., one 40 H. P. and two 50 H. P. printing press equipments for the "Manchester Sporting Chronicle"; a 25 H.P. type "O" printing press motor, to Cassell & Company, London; a slow-speed motor to the Belfast

"Evening News," as well as a 30 H. P. printing press equipment; two 50 H. P. motors to the London "Daily News." Other English orders include a small motor for the Machinery Trust, Limited, of Chester; two 40 H. P. slow-speed generators for the Thornycroft Shipbuilding Yards; a slow-speed motor of 5 H. P. to Richard Moreland & Company, of London, and a 4 H. P. motor for Chas. Churchill & Company, of Birmingham.

TRADE CATALOGUES.

The Atlas Bolt and Screw Company, of Cleveland, O., manufacturers of small cars, issues a very neat 64-page catalogue—No. 23—showing some of the different patterns of cars it builds. These include flat, deck and dumping cars for clay pits, cement, gas and tile works, quarries and mines. The catalogue also gives prices for portable track, and a great variety of steel wheelbarrows.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ALASKA.

A despatch from Seattle, Wash., says that the Standard Oil Company, having acquired not only the old Russian title, but a later mineral-land grant from the Government, to the coal lands at Cook's Inlet, Alaska, is preparing to develop the coal fields there. Alfred Ray, the local manager, has outfitted a corps of engineers who will complete surveys already partially made, and make other surveys for wharves, railroads from the mines to the shore, etc. The Cook's Inlet mines, as they are commonly known, were first worked by the Russians years ago, and later by a San Francisco company, but very little coal has ever been taken out.

ARIZONA.

Pima County.

Azurite Copper and Gild Mining Company.—This company, with $2,500,000 capital, is running a 30-ton smelter and taking ore from the Mineral Hill group of claims, 18 miles south of Tucson. The company has, it is stated, shipped 5 carloads of copper bullion from its smelter since March 1st, valued at over $25,000. At present 85 men are employed under L. W. Morgan, formerly of Los Angeles, Cal., superintendent. The officers of the company are: L. C. Hughes, president; C. H. Fillkins, vice-president; S. M. Woodward, secretary and treasurer. The offices of the company are in Tucson.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Dane & Mitchell.—These quartz mines, 1 mile southeast of Pine Grove, are reported to be sold to W. I. Smart, of New York, who will put in new machinery and develop the Mitchell to a depth of 450 ft.

Douglass.—The crosscut on the 400-ft. level at this mine, in the Volcano District, has been run 180 ft. in 28 days, all hand work. It is reported that the mine has been closed down during the past week by the owners until another payment was made by the bonders.

Ivanhoe.—This mine, 2½ miles northeast of Plymouth, is opened by 2 shafts. New machinery has been put in and sinking continues with an increased force of men.

Loyal.—This property, comprising the Loyal Lead and Black Hill claims, 1 mile east of Drytown, adjoining the Grover Mine, is to be reopened very soon under new management. The property was developed to a depth of 100 ft. several years ago.

Butte County.

(From Our Special Correspondent.)

Bader.—A short bedrock tunnel is to be run at this drift mine, 1½ miles east of Magalia, to tap the channel ahead of the present workings. The mine drains itself. About 7 men are employed. G. B. Mowrey is superintendent.

Chico Ochre and Mineral Paint Company.—The property of this company, located between Magalia and Lovelock, has been developed by a tunnel 100 ft. in length. The ledge averages 7 ft. in width. A mill for grinding the ore for paint is to be erected near the bridge across the Butte Creek. H. T. Epperson is manager.

Magalia.—Work at this drift mine 3 miles northeast of Magalia, near Butte Creek, is progressing rapidly. The channel has been followed down stream for about 4,000 ft., and 50 men are working under A. D. Cassaway. A shaft sunk to bedrock drains the workings. Water for power is brought from the Cherokee ditch through a ditch 2 miles long.

Morris Ravine.—This gravel mine, near Oroville, has been worked steadily for 2 years. Eleven men are employed. A new tunnel will be run to tap the channel in another place.

Calaveras County.

(From Our Special Correspondent.)

Esperanza.—The shaft at this mine, on I dian Creek, 2 miles northeast of Mokelumne Hill, now down 1,000 ft., is to be continued to the 1,500 ft. A new hoist will be put in.

Jones.—This old mine, 2 miles east of Glencoe, is to be re-opened. The water has been pumped out.

Veritas Gold Mining Company.—This company has been organized with a capital of $200,000 to work the Fellowcraft Mine, at San Andreas. The officers are: C. D. Fontano, president; J. M. Lively, vice-president and treasurer; C. C. Clark, superintendent and manager, and C. E. Hatch, secretary. Considerable development work has been done during past years. A good 10-stamp mill and an air compressor are on the property.

El Dorado County.

Placerville Slate Company.—This company has been incorporated with a capital stock of $100,000 to work slate quarries in this country. The directors are: T. R. Jones, H. E. Moody, of Sacramento, and K. L. S. Cummings and G. W. Cummings, of Placerville. The headquarters are at Sacramento.

(From Our Special Correspondent.)

Last Chance.—This mine, on Quartz Canon, 1 mile south of Volcanoville, is being developed by Dr. A. C. Smith, of Portland, Ore.

Montezuma.—Development work at this mine, ½ mile north of Nashville, is progressing rapidly. The water has been pumped out the old shaft which follows the 4-ft. ledge.

Nevada County.

(From Our Special Correspondent.)

Allison Ranch Consolidated.—At these mines, on Wolf Creek, 3 miles south of Grass Valley, the incline shaft is down 975 ft. and drifts are being run. About 30 men are at work under the superintendency of R. R. Robinson. The property is to be thoroughly opened up.

Bullion Company.—A 6-ft. ledge showing free gold was cut at this mine, 2½ miles south of Grass Valley, where 26 men are employed under George Mainhardt, superintendent. The erection of a 10-stamp mill is contemplated.

Gold Flat.—This mine, about 1 mile south of Nevada City, has been bonded for 1 year to J. H. English, who will install new machinery and open it.

Jackson.—This copper property, 2½ miles northeast of Spenceville, adjoining the Mineral Hill, has been purchased by P. Ehman, of Spenceville. A force of men is extending the tunnel, now in 200 ft.

Mineral Hill.—This property, 2½ miles northeast of Spenceville, comprising 5 claims, is reported bonded to an eastern company. The ore is said to assay from 5 to 20% copper and to carry some gold.

Pennsylvania.—At this mine, 1½ miles from Grass Valley, the new 10-stamp mill is crushing ore; 3 new concentrators have been put in. The machinery is driven by electricity through an 80-H. P. motor.

Placer County.

(From Our Special Correspondent.)

Blue Canyon Mining and Development Company.—The tunnel on the Azalea drift gravel claim is in 1,560 ft. and will have to be driven 1,500 ft. further before the channel is reached. The property consists of 160 acres.

Cedar Creek.—At this drift mine, about 1 mile south of Shady Run, the gravel was struck in the channel above the main tunnel, which is in 1,300 ft. Work continues in the main tunnel. W. J. Davis, Jr. is superintendent.

Golden West.—This mine, comprising 320 acres on either side of the North Fork of the American River, 5 miles south of Blue Canyon, is being developed by R. H. Lloyd, of San Francisco. A tunnel will soon be run about 40 ft. above high water mark. This will give about 500 ft. of backs. It is also proposed to bring in water through 1,600-ft. flume to the mill site to operate a turbine water wheel.

Morning Star Mining Company.—The drift mine at Iowa Hill is worked steadily under very favorable conditions.

Van Avery.—The Alder Creek Mining Company, operating this property, about 1 mile east of Blue Canyon, has driven 2 tunnels about 300 ft. respectively. The ledge averages about 5 ft. wide.

Shasta County.

(From Our Special Correspondent.)

American Eagle.—This property, in Shasta Mining District, has been bonded for 1 year to Taylor & Garvin, they to pay 10% of the net smelter returns after the first 100 tons.

Tuolumne County.

(From Our Special Correspondent.)

Altamont Mining Company.—This company, incorporated with $100,000 capital, has as directors W. P. Scott, T. A. Fisher, P. H. Reardon and J. C. Doherty. The company holds a bond on the O. P. Mine, on the Comstock Ranch, about 9 miles north of Soulsbyville, where it is doing development work.

Arastraville Mining Company.—This company is sinking on the Rising Sun Mine, on Turnback Creek, 9 miles east of Sonora. The ledge will average 18 in. wide. The mill is being repaired and a tramway will be built. A large amount of work has been done on the property already. J. L. Tonkins, superintendent.

Bown.—The 20-stamp mill at this mine, 1½ miles from Tuttletown, has started up. The incline shaft is down 600 ft. and enough ore is blocked out to keep the mill busy some time; 60 men are employed. A. F. Rule is superintendent.

Equitable Mining and Milling Company.—This company, working the Arbona Mine, on the south of Tuttletown, has sunk a shaft 350 ft. Sinking will continue to the 500-ft. On the 200 ft. a drift has been run 80 ft. north, in which rich ore has been encountered. The ledge is 4½ ft. wide. There is a 10-stamp mill on the ground and a new hoist is to be put in.

COLORADO.

Chaffee County.

Gypsy Queen. This group of claims below Salida are reported bonded for 6 months for $15,000. But little development work has been done on the property.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—L. G. Davidson to B. B. Davidson, of Denver, a ½ interest in 9-10 of Cairo Lode, in Gregory District, for $3,500. L. D. Herr to Tyson C. Dines, of Denver, ⅛ interest in easterly 833 ft. of Carr Lode and ⅛ interest in Plymouth Lode, in Gregory District. G. W. Wilson to J. Best, the Silver Friend Lode, in Enterprise District. P. C. Hansen to D. Barnes a 1-3 interest in 1,500 ft. of placer ground in Nevada Gulch. R. W. Dairs to Chas. Lundvall a 3-27 interest in Alaska Lode, in Central District. L. Essman has leased and bonded to Zang Brewing Company, of Denver, the Last Chance, in Central District. H. B. Gilbert to S. J. Gilmore, of Denver, the Side Issue, Golden Thread, Delaware, Panic, Little Joe and Hub Lode claims, in Pine District. F. M. Cobb to J. McLean, of Denver, ¼ interest in Carrie K, John D and Frank M claims, in Pine District.

Buell.—It is reported on good authority that this mine, at Mountain City, is to start up soon.

Gettysburg.—A local pool has taken a lease for 3 years on this property, and also the property of the Old Gregory Gulch Gold Mining Company, which they work on the tribute plan. C. Truscott is manager.

Gold Dirt Mining Company.—This company is working the Gold Dirt with 20 men and taking out fair grade mill and smelting ore from the 480-ft. levels. They will sink on the Comstock claim. C. Weidenbrock is in charge.

Lincoln.—Boston parties have resumed work on the Lincoln, in Illinois-Central District. M. F. Flynn is in charge.

Maumee Valley.—This company is opening up a group of 10 claims in Russell District, and may erect a mill to treat the ore on the ground.

Perigo.—The Tonawanda Leasing Company is working this property with 50 men and is taking out about 100 tons of ore every day. E. M. Messiter is in charge.

Steward.—Machinery has been ordered for this mine, in Hawkeye District. Boston parties are interested with Prof. E. C. Lindemann in charge.

Lake County.

(From Our Special Correspondent.)

Zinc Mining.—One zinc milling scheme just perfected is known as the Golob-Colly Milling Company, the promoters being Jos. Golob, of the Ballard Mine, and Jos. Colly, who have made experiments and have leased the old Tabor Mill, on the Arnold Placer, in California Gulch, for 2 years. The mill has 20 stamps and some new concentrators are to be purchased at once. The company will get its supply of ore from the A. Y. and Minnie and Maid of Erin mines and will ship to Indiana.

Colonel Sellers.—Report has it that this property, purchased some time ago by the New Jersey Zinc Works Company, is to be started up very soon.

Gold Rose Mining Company.—Denver capitalists have decided to start work on 35 acres of valuable territory across Evans Gulch, north of the Fanny Rawlings. Messrs. Geo. E. Ross-Lewin and H. A. McIntire, of Denver, are at the head of the new proposition.

Hope.—This old-time property has been started up by new lessees, Patterson & McCormick. The shaft is down 425 ft. Iron was shipped from the old workings in the past.

Ibex.—The large compound, condensing mine pump, built by the Jeanesville Iron Works Company, at Jeanesville, Pa., has arrived. It required two cars. It is the first steam mine pump having a 36-in. stroke in the Leadville District. The specification was made up by the mechanical engineer of the Ibex Company.

Little Ellen.—Taylor & Company, lessees, are working at the 750-ft. level. Considerable ore has been hoisted, and shipments of 30 tons per day will start this week.

Louisville.—After shipping steadily from the upper levels for some time the owners have decided to work the lower levels under water for 5 years past. The water to the 700-ft. level will be drained by the 600-ft. station pump. The work is being conducted by Mr. A. F. Wuensch, manager.

Mahala Mining Company.—It is probable that the winze, sunk 230 ft. into the present rich ore shoot, will be put down 50 ft. further. The work will be expensive, owing to the large amount of water to be handled. The present workings show fine ore, with shipments of 100 tons daily.

May Queen.—Prospecting and development work are in order. The shaft is now down 400 ft.

Nisi Prius Leasing Company.—The company in the 1,000-ft. drift in the Crown Point, has encountered a body of carbonate ore which shows 86 oz. silver and 7% lead which is opening up nicely.

Resurrection Gold Mining Company.—Over 200 tons are shipped and the ore bodies are opening up wonderfully. The land office at Washington has sustained the decision of the local land office against the suit brought by Connolly Brothers, of the Dolly B. to prove a fraudulent patent on the Resurrection.

Pitkin County.

Emma.—This mine at Aspen, for 10 years owned and worked by the Aspen Mining and Smelting Company, of which Jerome B. Wheeler of New York City was president, by a recent decision of the United States Circuit Court is declared to be the property of W. J. Wood, Jr., an inmate of an insane asylum at Topeka, Kan.

San Juan County.

Red and Bonita Mountain Gold Mining and Smelting Company.—This company, composed of Quincy, Ill., parties, has let a contract to the Gates Iron Works, of Chicago, for a mill on its property. There are said to be 3,500 ft. of tunnelling done on the company's claims.

Silver Chief.—This mill, near Telluride, has started its season's work and is shipping concentrates.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Damon Gold Mining Company.—Shipments continue by the lessees on this property, situated on the north slope of Bull Hill. The Pinnacle property in this neighborhood is also shipping some ore. Several pieces of property here have changed hands of late, and applications for leases are numerous.

Economic Gold Extraction Company.—The new mill in Arequa Gulch is progressing favorably. Grading is being done for switches from the railroad.

Independence Town and Mining Company.—It has been reported that the control of the Wilson Creek Consolidated Mining Company had been gotten by W. P. Dunham, interested in the Scottish Chief lode, which is in litigation with the Hull City placer of this company. This consolidates the main interests fighting the Hull City Placer.

Isabella Gold Mining Company.—The foundation is ready for the new hoist on the Lee shaft. The boilers are in and the hoist will soon be set up. It is understood that the principal work in the mine is running the 10th level to open the rich shoot discovered on the 9th. Geo. Kilborn, of Cripple Creek, is in charge.

Kimberly Gold Mining Company.—On this company's property are 5 leases running. Pueblo parties recently bought out the Hight & Sims lease and Millikin and others have just started work. The company's ground is on Beacon Hill.

La Bella Power Company.—The large electric plant at Goldfield will probably be ready about June 15th. The air compressor is supplying air to the Victor, Granite, Legal Tender and other mines, 21 drills in all. It is capable probably of running about 75. The engine was built by the E. P. Allis Company of Milwaukee, Wis., and the compressor part by the Ingersoll-Sergeant Company, New York City.

Midway Gold Mining Company.—This new company owns the Climax and Axtel lodes on Ironclad Hill, near Midway Station. Work has been begun and good indications are reported. This part of the district has drawn considerable interest of late on account of the strikes on the Damon, Pinnacle and other properties.

Mobile Gold Mining Company.—Lessee Terrill and associates on the Last Chance Claim are now down about 300 ft. and drifting in several directions will begin. The shaft will be sunk 400 ft. The showing in the shaft is very good. A winze is being sunk on the first level on what seems to be the beginning of an ore shoot.

Rumored Sales.—Rumors are again circulated that the Portland is to be placed in London. These seem to arise from the fact that Mr. F. G. Peck is in Europe and that Mr. Irving Howbert is to go there soon. It is also reported that both the Anchoria-Leland and the Elkton are to be sold.

Standard Tunnel.—Work has been suspended on account of a heavy flow of water. The tunnel is about 2,800 ft. long and is backed by New York parties. It starts into Beacon Hill in Gold Run Gulch and runs toward the Elkton Mine. The tunnel has been run by Wm. Harris and others, who had a contract.

CONNECTICUT.

Middlesex County.

The stone quarries at Portland are very busy and are cleaning out their old wooden derricks and replacing them by steel. They have placed an order with the Berlin Iron Bridge Company, of East Berlin, Conn., for masts and spars.

FLORIDA.

Phosphate Industry.—The pebble phosphate miners in Bartow County (5 in number) are said to be negotiating for a consolidation. The Dunnellon Phosphate Company, large high grade rock shippers, is reported to have taken a controlling interest in the Peace River Phosphate Mining Company, river pebble miners. The Peace River Company has a yearly output of over 100,000 tons, worth f. o. b. vessel at Punta Gorda, about $3.50 per ton.

Taylor County.

National Phosphate and Mining Company.—This company, it is said, contemplates developing some phosphate lands in this county by building a railroad 25 miles long to connect with the Florida Central & Peninsula.

IDAHO.

Blaine County.

Joseph Siker, of Hailey, has sold the Aetna, Pleasant View, Tiroli, Ida and Vesuvius mining claims, situated in Greenhorn Gulch, to Frank E. Wilson, of Salt Lake City, for $5,000. There are to be two payments made.

Tiptop.—The company's mill at Hailey is ready for work. It has 20 stamps, each weighing 850 lbs. to drop 90 times a minute, and is expected to handle 50 to 60 tons of ore in 24 hours. From the plates the pulp will go to 2 Frue vanners with corrugated belts to remove the larger pieces, thence to sizers and to vanners with smooth belts. The water for the mill will be pumped from Rock Creek and stored in 2 tanks having a capacity of 20,000 gal. each. A comet crusher will break the ore for the stamps. The mill will be lit by electricity. Mr. Lusk is superintendent.

Boise Count.

Basic Dredging Company.—This company is putting in a third dredge near Centreville.

ILLINOIS.

Grundy County.

Chicago, Wilmington & Vermillion Coal Company.—This company has laid out a new town to be known as South Wilmington, on Mazon Creek, 2 miles southeast of Gardner. A shaft 186 ft. deep has been put down in the midst of 1,500 acres of coal land. Tracks have been laid, mining buildings erected, machinery installed, streets laid out and a large number of cottages built. The steel tower being erected is the only one in the Wilmington District.

MICHIGAN.

Iron—Gogebic Range.

Davis Iron Mining Company.—This company has been organized to work the Davis Mine, 1 mile east of Ironwood, where a promising body of non-Bessemer ore has been found near the surface. The capital stock is $100,000, divided into 4,000 shares of $25 each. The following are directors: J. R. Moore, E. C. Waler, F. J. Sager, Ironwood; G. E. Moore and H. E. Welch, Oconomowoc. J. R. Moore was chosen president; L. C. Walker, secretary; F. J. Sager, treasurer.

Iron—Marquette Range.

East New York.—This mine at Ishpeming has been leased by the feeholder, A. M. Bigelow, to E. E. Bairs of Buffalo. The mine is to be pumped out at once.

Queen.—At this group of 4 mines near Negaunee, mining goes on in all the shafts last worked and about 600 men are busy under Capt. Roberts. About 400 men more could be employed.

Iron—Menominee Range.

Crystal Falls District.—Prospecting for iron is more active than since 1891. The valley of the Michigamme River will be thoroughly explored this summer and a considerable amount of work will be done in the area between the Crystal Falls and the Mansfield Mine, as well as about the Hope and the Lee Peck. Another tract that may be explored lies between Crystal Falls and Iron River.

Dober.—The new working shaft at this mine at Iron River is down 75 ft.

Hemlock.—At this mine at Amasa the surface plant now includes 4 boilers and a new E. P. Allis 20-drill compressor. The underground work is on the 6th level. The vein is very long and narrow. About 100 men are employed under E. C. Lawrence, superintendent.

Michigan.—This property at Amasa has been pumped out and exploration work will be pushed.

Riverton.—Plans are completed by the Oliver Mining Company for changing the course of Iron River near the Miller and No. 5 shafts and the Dober mine.

MINNESOTA.

(From Our Special Correspondent.)

G. Johnson is prospecting on section 2, T. 62, R. 11. It is reported that the explorations made by Cole & McDonald in section 15, T. 63, R. 11 for A. C. Ely and others are meeting with success. The drill at Robinson Lake for J. M. Underwood is also said to have struck unusually fine ore. If all the reports of ore found of late on the Vermilion are correct there need be no fear of a shortage of Bessemer for many years to come. Some splendid showings are reported from State lands in section 36, T. 64, R. 10, and the whole section has been taken under lease. These are all east of or near Ely. A few miles from Tower, and close to the town, explorations are under way on a number of properties. In section 16, T. 61, R 16, there is a remarkable outcrop and explorations are to be started there at once. This is on Pike River, and the stream cuts through the formation.

On both Mesabi and Vermilion ranges explorations are starting frequently, among the newer being these: By the Pittsburg & Lake Angeline Iron Company, of Ishpeming, on section 25, T 63 R 12, and on 35, T 63 R 13. W. T. James, of Ely, on 16, T. 62 R. 14. R. Whitesides of Duluth, on section 32, T. 63, R. 12. Preliminary work is in progress in many other locations, some of them in localities that have not been regarded as containing iron. On the Mesabi there have been many leases taken from the State in T. 58 R. 19. In the east side of T. 58 R. 20, and in the center of that town E. J. Longyear and J. T. Jones are working, respectively.

Some 22 State leases of mining lands were taken last week on lands at the western end of the range, mainly in T. 58, R. 19 and T. 56, R. 23. A large number of other leases were dropped as of no value.

Lake freights now stand at 75c. from the head of the lakes, 65c. from Marquette and 60c. from Escanaba. Coal rates back have advanced to 30c. and are strong. The docks of the Duluth, Mesabi & Northern road, at Duluth, have been blocked with ore waiting shipment the past week. At one time there were about 100,000 tons of ore waiting. The Eastern Minnesota road rebuilt a portion of a broken trestle bridge on its ore line recently 1,150 ft. long and from 60 to 110 ft. high, in 13 days. The Great Northern has prepared plans for from 200 to 400 steel ore cars, contracts for which will be let soon. They are to have 80,000 lbs. capacity each and are to be built of plates, channels and angles.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Howe & Roberts, of Duluth, have bought for $25,000 a ⅛ interest in lands close to the McKinley Mine that have been under exploration. Federal Steel is likely to have these lands ultimately.

P. L. Kimberley, of Sharon, Pa., who was interested in opening the Biwabik, Ohio and Adams, is again on the range, represented by his son and J. T. Jones. They are exploring on the west end of the range and have begun opening the Jones 40, close to the Franklin, at Virginia.

Adams Mining Company.—This company is erecting a steel head frame and shaft house, a peculiarity in a country where timber is to be had cheaply. The new shaft will be a departure from anything in Minnesota, and the second of its kind in the whole Lake Superior region. The entire headwork will be for the most economical handling of material, while the arrangement of machinery will be novel. It is being built by the Wisconsin Bridge Company.

American Steel and Wire Company.—The company has leased the Alpena Mine from W. C. Yawkey for a long term of years at a royalty of 15c. a ton on a basis of 100,000 tons annually. Alpena adjoins Sauntry and will be worked in conjunction. Its proved ore body is in excess of 2,500,000 tons.

Auburn Iron Company.—Some 75 men are working, and the steam shovel, wrecked some time ago, is loading steadily, so that daily shipments are 1,200 tons.

Commodore Mining Company.—Many surface improvements are under way at this Virginia property, including boiler and engine houses. Some 150 men are working, but the force and the output, now some 300 tons daily, will be much increased soon. The ore is high grade and will be mined at low cost.

Iron-Vermilion Range.

(From Our Special Correspondent.)

A. Kidder, of Marquette, Mich., manager of the Pittsburg & Lake Angeline Company, has been at Ely preparing for explorations on section 24, T. 63, R. 12, owned by Hartman, Hallett and Silverman, 3 miles east of Ely. Indications are good, and the property is almost sure to develop into a mine. The company will also do other exploration.

Chandler Iron Company.—This company shipped a total of 6,080 tons of ore from Ely one day the past week, or 234 cars. This beats the mine's record.

Cook County.

(From Our Special Correspondent.)

Johnson Nickel Mining Company.—This company has been exploring all winter for iron with several drills. Some of the holes are said to have been sunk 1,000 ft. No definite information can be had of the operations of the company.

MISSOURI.

Jasper County.

Joplin Ore Market.—The week showed a slight increase in the shipments of both ores, but a decrease in the price of fancy grade zinc ore of $1 per ton, the ore from the Eagle Mine at Belleville selling at $49. Oronogo and other high grade ores sold strictly at the schedule of the Zinc Miners' Association, $47 per ton for 60% ore. Lead sold throughout the week at $26 per 1,000. A surplus is gradually accumulating, and the Zinc Miners' Association expects to handle it if it becomes large enough to menace the stability of the market. The membership of the association is increasing rapidly, and the assessment of 25c. per ton on every ton of ore sold by members is being paid cheerfully, and a large treasury fund is rapidly accumulating. During the corresponding week last year zinc ore sold for $27 per ton and lead at $21.75 per 1,000, the zinc shipments were less than last week by 1,892,600 lbs., the lead shipments greater by 184,080 lbs., and the value less by $119,657. For the corresponding 21 weeks of 1898 the zinc shipments were less by 35,680,410 lbs. the lead sales greater by 3,978,780 lbs., and the value less by $2,211,576. As compared with last week the shipments show an increase of 268,710 lbs. of zinc, 23,770 lbs. of lead, and the value was greater by $6,748. Following is the turnin by camps:

	Zinc, Pounds.	Zinc, Pounds.	Value.
Joplin	1,956,940	227,940	$48,937
Webb City	395,700	39,500	9,915
Carterville	1,167,380	190,250	31,213
Oronogo	1,068,750	5,580	21,857
Belleville	245,570	11,280	6,064
Central City	706,530	39,410	16,922
Duenweg	247,450	99,040	7,895
Hells Neck	105,580	49,010	3,745
Stotts City	155,860	.....	3,653
Alba	131,910	.....	3,700
Galena-Empire	2,923,470	310,000	69,453
Aurora	1,305,000	20,000	26,105
Granby-Newton Co.	192,000	22,000	2,002
Wentworth	40,000	.....	1,760
Total for week	10,642,140	1,014,010	$252,621
Total 21 weeks	214,148,560	19,198,520	$4,633,994

Sales.—A majority of the stock, 762 shares, of the Chitwood Hollow Land and Mining Company, has been sold to a Boston syndicate. The price is said to have been $150,000. The name of the company has been changed to the Union Zinc and Lead Mining Company. The American Zinc, Lead and Smelting Company has purchased the 400 acres of land at Carterville, known as Davey Heights, for $85,000. Forty acres of the land is leased to the North American Coal Company, of New York, which have developed a 40-ft. face of ore at 160 ft. and is sinking the largest pump shaft in the district, which will be 12 by 14 ft. in the clear and will operate 2 cages. Hon. W. C. Renfrow, late Governor of Oklahoma, purchased the land for his company, which now owns over 700 acres of developed land in the Carterville District. The 204 acre lease of the Lehigh Drainage Company, at Lehigh, has been purchased by E. B. Quinlan, of Chicago, for $25,000, and the old owners will receive in addition a royalty of 2½% during the life of the lease. It is believed that the Ishpeming Company, who successfully drained its property adjoining with an air lift, are the real purchasers. Hugh McIndoe, of Joplin, has purchased of Bataille Miller and others of Galena, the Dead Dog, Battle Axe, Three Coons and Needmore, on the land of the Southside Company at Galena, paying $9,000 for the group. The properties will be developed and a big concentrating plant put in to handle the dirt.

MONTANA.

Carbon County.

Clarke's Fork Coal Company.—The company's new plant at Bridger, 45 miles from Billings, is called the most complete in Montana. The mine is opened by 6,000 ft. of tunnels and drifts, and in a year is expected to employ 600 men and produce 1,000 tons daily or more. The seam worked is 4 ft. thick. According to the Billings "Gazette," Harry Cottle is superintendent, for 15 years with the Northern Pacific Company, at Roslin, Wash. Harrison coal mining machines, manufactured by the Geo. D. Whitcomb Company, of Chicago, are used, the mine being developed on the room and pillar system. Another mining machine, manufactured by the Link Belt Machinery Company, of Chicago, is being tried. The surface plant is equipped with 4 125-H. P. boilers, two McEwen high-speed engines of 250 H. P. each. This plant furnishes power to operate a 250-H. P. hoist, located 7,000 ft. from the power plant, which is transmitted over four No. 4-O copper wires; power for the ventilating fan of 30 H. P. capacity; the mine pump; the electric mining machines; the lighting plant for the mine and buildings, supplying both arc and incandescent lights, and a 80-H. P. locomotive, to haul the coal from the hoist to the tipple, a distance of 7,000 ft. The plant also furnishes power to operate the 60-H. P. electric pump at the Clarke's Fork River, 6,400 ft. from the power house, which delivers 350 gal. of water per minute through 8-in. mains to the reservoir, with a capacity of 60,000 gal. The tipple building is equipped with Phillips dump and shaking screens, which separate the coal into four sizes—lump, egg, nut and slack. These are delivered into four railroad cars, the screens being so arranged that the mine run can all be loaded into one car, or any combination of the different sizes of coal. The tipple and entire electric plant were manufactured by the Link Belt Manufacturing Company, of Chicago, being installed under the superintendency of H. C. Simpson. T. P. McDonald, formerly of Red Lodge, who opened the mine, is general manager for W. A. Clarke, the principal owner.

Jefferson County.

Last Shot.—This mine, at Clancy, has closed down.

Hope.—This mine, at Basin, has closed down again.

(From Our Special Correspondent.)

Beaver Group.—Minteer & Winter have sold this group of claims to Hartford, Conn., parties.

Bell.—This prospect, owned by Si. Flemming, at the head of the Middle Fork of Warm Spring Creek, shows 2 ft. of $85 ore at a depth of 25 ft.; 25 tons have been taken out in sinking. The ground joins the B. & G. Mining Company's and is thought to be on the same vein. Wilber, Gordon & McPherson, of Wickes, have bonded this property at $15,000.

Cornick Placer.—The steam shovel has been put together, but owing to the unusual amount of snow, work will not start before June 1st. The ground is at the head of Cataract Creek, at an elevation of 7,000 ft.

Minah.—J. O. Brisco & Sons are working parts of this property and have different levels let out to tributers. Altogether the shipments average close to 5 cars per week, shipped to Butte.

Mollie McGregor.—This property, on Boomerang Gulch, has been examined by the Butte owners with a view to reopening it.

Montana & Cleveland Mining Company.—This company, which has been operating on the Little Boulder under a bond and lease, seems to be in financial difficulties. Its belongings have been attached and a receiver has been appointed.

Overland.—This Cataract mine has been taken under bond and lease by White Matherson, of Wickes. The ore is a lead carbonate (argentiferous), and returns about $35 per ton.

Snowdrift.—The Occidental Mining Company, of St. Paul, Minn., has again started work on this claim. Boston people lately took a large block of stock.

Lewis & Clarke County.

(From Our Special Correspondent.)

Alpha & Omega.—This property, in Stemple District, belonging to Sanford & Evans, of Helena, has been bonded to James McCauley for $30,000 for 18 months. Some years ago a 10-stamp mill was erected, which ran at a profit. The property has been idle some years.

Gold Treasure Mining Company.—This company, incorporated by J. J. Barrett, D. B. Collins, M. F. Kennedy, S. Hughes, E. M. Crimmins, G. E. Sherman and Wm. O'Neill, will work the Gold Treasure Mine, at Marysville. The capital is $300,000.

Madison County.

(From Our Special Correspondent.)

Chicago Mining and Development Company.—This company will have a dredge on the ground leased from the German Bar Mining Company by June 1st.

Cole Creek Placers.—Mr. Tanner, who has worked this ground 7 years, will this season use an additional giant. He is arranging to save the corundum in the gravel, claiming to have a commercial product.

Fenner Placer.—L. A. Fenner is employing a full force. He has worked this ground very successfully several years.

Owsley Smelter.—This Twin Bridges plant will start as soon as the sampler is completed. Ore has been accumulating for 60 days.

Park County.

(From Our Special Correspondent.)

Bear Gulch Gold Mining Company.—Work resumed.

Butte & Yellowstone Coal and Coke Company.—This company has 15 coke ovens in constant use, while a large amount of coal is shipped to the western part of the State.

Byum.—This Trail Creek coal mine is being developed with vigor. With the completion of Trail Creek Railroad the output will be 400 tons per day.

NEW JERSEY.

Morris County.

Beach Glen Mining Company.—The Beach Glen Mine, near Sucasunna, says the Dover "Iron Era," has been reopened and ore is being shipped to Temple, Pa.

Gledon Iron Company.—All the real and personal property of this company has been sold by George Richards, receiver, to John Wharton of Philadelphia, for $50,000. Work has begun for a new stock house near the Wharton Furnace at Port Oram and the Wood Mine in Upper Hibernia, idle for several years, will be pumped out. A. Davis-Colby furnace, 19 by 43 ft., will be erected at the Hibernia Mine to roast the magnetite ore to a hematite, which, it is said, will avoid the necessity of purchasing large quantities of Lake Superior hematite ores as a mixture for the furnace. It is also said that a larger furnace may be built at Port Oram, the present furnace having a capacity of 150 tons daily. The Wharton Mine at Hibernia is now employing 335 men. A new air compressor, said to be the largest in the State, was recently installed. It is said that the concentrating plant at the foot of Hibernia Hill may start work also.

Green Pond.—The Carteret Steel Company has pumped out the mine and is making experiments at Hackettstown, in the old furnace, with a new process; the improvements and alterations in the plant are being made under the direction of John Hartman of Philadelphia.

Richards.—The Thomas Iron Company is making extensive improvements at this mine at Dover. Babcock & Wilcox boilers have been installed and a new compressor and ore pockets are being erected.

Sussex County.

Hurd.—At this old mine, near Hurdtown, Pilling & Crane, under the management of Thomas M. Williams, are driving a drift in consequence of recent explorations made with a diamond drill.

Weldon.—Merrill & Jacobs of New York City have taken hold of this mine, below Hurdtown, and have begun work there.

OHIO.

Athens County.

(From Our Special Correspondent.)

Beaumont & Chauncey Coal Company.—The mine opened up a little over a year ago by this company at Chauncey has been abandoned on account of the poor quality of the coal and numerous faults.

Perry County.

(From Our Special Correspondent.)

New Hamburg Coal Company.—This company has shut down indefinitely its mine No. 12 at Sulphur Springs, and No. 13 at New Hamburg.

Ohio Iron Company.—Wm. Panner, of Gloucester, has purchased the property of this company, just north of Rendville, and has leased it to Wm. Job, of Columbus, who is to open up a coal mine at once. This will require a shaft.

Sunday Creek Coal Company.—This Columbus, O., company, operating 3 mines in Perry and Athens counties, has obtained possession of Reybould Brothers' mine at Orbiston and is working it. This mine has a capacity of about 1,200 tons daily. C. C. Sharp of Corning, O., is general superintendent.

Sunday Creek Coal Company.—The company has closed down Mine No. 8, at Corning, and does not expect to work it this summer.

Turney & Jones Company.—There being no bidder for the property of this company, at Congo and Hemlock, last month, the company has been granted the privilege by the court of operating the property for 6 months unless the sheriff gets a purchaser in the meantime.

Turney & Jones Company.—Congo mines No. 1 and No. 2, at Congo, and Mingo, at Hemlock, have been closed indefinitely. The property of this Columbus company is still for sale by the Sheriff, the price being set by the court as not less than $250,000.

OREGON.

Lane County.

Confidence.—This group of claims, in the Bohemia District not far from Cottage Grove, has been bonded by J. T. Jones to Seattle parties for $50,000.

PENNSYLVANIA.

Anthracite Coal.

Philadelphia & Reading.—Two compressed air

locomotives are in operation at Shenandoah City Colliery hauling mine cars to and from the shaft.

Bituminous Coal.

Increase in Miners' Wages.—According to a press despatch, all the leading coal operators in Blair, Cambria, Bedford, Somerset, Clearfield, Center, Jefferson, Indiana, Elk, Cameron, Clinton and Huntington counties have posted notices granting the advance asked by the men. This includes most of the mines represented in tidewater shipments from Pennsylvania.

Slate.

(From Our Special Correspondent.)

Wage Advance.—There has been a general advance in wages to laborers and holemen of 10 to 15% in Bangor and Pen Argyl quarries.

New Slate Deposit.—A vein of extra fine quality Peach Bottom slate is reported uncovered in the borough of Delta, York County. It is to be immediately developed. New York capitalists are said to have offered $45,000 for the tract of 32 acres.

Bangor Superior.—Keenan Brothers, lessees, seek a stay of foreclosure proceedings on the property to preserve their profitable lease, which has 12 years yet to run. A recent sale of the property by the sheriff for $25,000 did not hold, owing to an error in the sheriff's writ. The lessees have petitioned for a rule by which they may give security for the mortgage.

Crown Slate Company.—At the annual meeting these officers and directors were chosen: Fred Hussey, New York, president; L. W. Morss, Scranton, Pa., treasurer and general manager; Alfred Doney, Pen Argyl, superintendent; M. L. Tinsman, Portland, treasurer; H. D. Roberts, William Lane, Pen Argyl; John I. Miller, A. O. Allen and L. H. Allen, Pen Argyl. The mill at Pen Argyl is working steadily on large orders.

Slate Brick Manufacture.—The erection of a plant to use slate rubbish for bricks and tiles is agitated in the Peach Bottom District. Baltimore capitalists are ready to invest $200,000, it is said. Overtures have been made to the Delta quarries' owners, York County, to buy their waste at 20c. a car-load.

Slatington-Bangor Slate Syndicate.—At the company's annual meeting the following directors were elected: A. L. Foote, J. L. Foote and P. N. Snyder, Slatington, Pa.; W. F. Trexler, Philadelphia, and C. B. Brady, Phillipsburg, N. J.

Wind Gap Slate Manufacturing Company.—In annual session the directors completed the 5-year lease to the Park Slate Company, who will make 20,000 ft. of mill stock monthly. New machinery has been added. These officers were re-elected: President, E. D. Vosbinder, Johnsonburg, N. J.; vice-president, C. Miller, Nazareth, Pa.; secretary, P. S. Yetter, Belvidere, N. J.; treasurer, J. J. Heintzelman, Nazareth, Pa.

PORTO RICO.

Spanish-American Mining Company.—This company, with $10,000,000 capital, has been organized under New Jersey laws to do a mining business in Porto Rico. The property to be worked is said to be near San Juan. The ore is said to be high grade, and will be shipped to the United States. The incorporators are Charles Efros, Vincent P. Savers, Francis C. Travers, Joseph D. Savage and Benj. Tuska, all of New York; Jose Ramon Latimer, San Juan; Pedro Sampisleban y Charvarri, San Juan, and G. P. Nelder, Stanwood, N. J.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Free Gold Strike.—A remarkable strike of free gold has been on a tributary gulch to Lightning Creek, nine miles southwest of Custer. Two brothers, Charlie and Lee Carr, found a vein of quartz 9 to 14 in. wide, which has given remarkable assays. It has been traced by its outcroppings ½ mile and is on the east edge of the lime formation. All the ground has been staked 2 miles around. The Holy Terror Consolidated Company had representatives making examination. A Custer County party has offered to bond the 11 claims in the group for $60,000 for 60 days, paying $1,000 down. This proposition will probably be accepted.

Spokane.—S. E. Young, superintendent of this mine, near Custer, is arranging to put in additional air drills.

Lawrence County.

(From Our Special Correspondent.)

Black Hills Forest Reserve.—The Commissioner of the Interior ruled that sheep grazing is prohibited on the Black Hills forest reserves. Live stock pasturing will be permitted as long as no injury is done.

Cleopatra Mining Company.—R. B. Hughes, general superintendent, of Rapid City, is planning to begin work on the company's mining ground in Squaw Creek District. About 143 acres have been entered for patent. A wagon road is to be built from Carbonate Camp and a boarding house and shaft house erected.

Deadbroke.—R. M. Maloney of Deadwood has leased the Deadbroke Mine and Mill, in Blacktail gulch, to Godfrey & Nelson. The option calls for a payment of $5,000 in one year, and balance, $20,000, within 2 years. The lessee is to pay 12½% upon the gross extraction of all ores mined and milled. The mill has been remodeled into a concentrating process.

Deadwood & Delaware.—The recent sale of the Deadwood & Delaware Smelting Company's Black Hills possessions to the Golden Reward Consolidated Mining and Milling Company, both of Deadwood, for a consideration a little under $1,000,000 has been pending a long time and was principally to give the Golden Reward Company a place to smelt the large amount of ore in the Bald Mountain mines, which could not be chlorinated. Dr. Franklin R. Carpenter will remain as general superintendent. Custom ore will be received, but the price of treatment will be raised.

Detroit & Deadwood.—Clear title has been obtained for the copper ground in Deadwood and the company has asked for bids to run a 700-ft. tunnel from the creek level and sink a shaft to the tunnel. Robert H. Murray, of Detroit, Mich., secretary of the company, is in Deadwood.

Ella Eldon Company.—A large vertical of gold ore has been struck 140 ft. from entrance to tunnel in Grizzly Gulch. Ore is said to average $6 gold and concentrates about 6 to 1. Company is composed of men at Sugar Grove, Pa., and Elk Point, S. D.

Homestake Company.—The cyanide plant at Lead is completed and one tank is testing concentrates. The plant will be enlarged to treat all of the tailings of the mills if the test is successful.

Norwich.—C. M. Swan and B. H. Kingsbury, of Sioux City, Ia., the new lessees, will superintend a test run on some free milling ore from the mine in the Galena Mining Company's mill at Galena.

Squaw Creek Mining Company.—S. D. Pollock, one of the principal stockholders, is at Deadwood from Plattsmouth, Neb., to superintend development of the company's ground in Squaw Creek District. A tunnel will strike a phonolite dyke 400 ft. in.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending May 27th there were forwarded East from the different smelteries and camps of the State 20 cars, or 827,216 lbs., lead-silver bullion; 3 cars, or 124,959 lbs., copper bullion; 4 cars, or 186,200 lbs., hematite—to Montana for flux; 45 cars, or 1,863,950 lbs., silver-lead ore. No shipments of copper have been made by the Utah Consolidated Smelter.

Ore Production.—Compared with the first 5 months of 1898, this year's mine shipments show a decrease from 35% to 15% each month, but in June there will probably be an increase. The Utah Consolidated output will bring the Bingham tonnage ahead of any recent year, while improved conditions at Park City assure a handsome increase there. The other districts will fully keep up to 1898.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending May 27th there were sent out from the 3 rail points of the district 6 bars of bullion, 97 cars of ore and 10 cars of concentrates, credited as follows: Grand Central, 21 cars ore; Bullion Beck, 20 cars; Centennial Eureka, 8 cars; Swansea, 10 cars; South Swansea, 8 cars; Gemini, 5 cars; Uncle Sam and Humbug, 5 cars; Mammoth, 3 cars; Star Consolidated, 3 cars; Sunbeam, 2 cars; Joe Bowers, 1 car; Lower Mammoth, 1 car; May Day, 1 car; Dragon Iron, 9 cars hematite for flux. Bullion Beck sent forward 5 cars concentrates; Mammoth, 5 cars concentrates and 6 bars bullion.

Four Aces.—In north drift from 700 level an ore face is opened, which Manager Cole anticipates will yield a car a week. South drift on same level has cut ore and further improvement seems probable.

Northen Spy.—At special stockholders' meeting at Provo, on May 24th, Brigham Smoot was made superintendent, and an executive committee consisting of Lafayette Holbrook, Reed Smoot and Jesse Knight was chosen.

Piute County.

(From Our Special Correspondent.)

Gold Mountain.—Although the snow has hardly more than disappeared, there are over 50 men working in the camp.

Sevier.—On May 26th, at Salt Lake City, President-Manager Charles Lammersdorf bought the block of stock that was owned by the Utah Consolidated for the delinquent assessment.

Salt Lake County.

(From Our Special Correspondent.)

Bingham Tunnel.—This undertaking, to cut the heart of Bingham 400 to 1,500 ft. lower than the workings of the old mines, is in fair way to be completed soon. It is now in 1,450 ft.—length to Old Telegraph Mine of the United States Company, 13,000 ft. Within a month electric power will be used from the plant of the Salt Lake City Water and Electric Power Company, on Jordan River. A shaft on the Ontario is to cut tunnel grade at 402 ft., 1 mile from the mouth, affording two additional headings. An arrangement is entered into by the Dalton & Lark to drive both ways from its deep shaft when 377 ft. lower than its deepest working. There is ample ground for treatment plants and an adequate water supply at mouth of tunnel. Captain De La Mar's plans include using the tunnel for other ground he has an interest in, which will necessitate a branch feeder over 3,500 ft. Estimates of ore tonnage that naturally will be taken through this bore are 3,000 tons and upward daily. Mr. Allen G. Lamson is the promoter. Among others, Mr. A. H. Tarbet is now identified with the project. Cost of the tunnel will be $300,000.

Mackintosh Group.—Exploration under De La Mar regime is in progress. It is contemplated to drive 6,000 ft. of tunnels, drifts and crosscuts, and probably to test the huge cupriferous porphyry dyke. Experimental concentrating runs afforded 30% copper, $4 gold per ton.

New Mammoth.—Manager E. G. Rognon now counts on having the cyaniding mill in commission about June 15th.

Red Wing.—Mill is handling 40 tons daily, 3 tons of crude making 1 ton of concentrates—a lead-silver product. There are 1,000 tons on the dump. Some of the shipping ore goes well in copper. The April crude shipments brought $4,000.

Silver Shield.—A transfer of title is agreed upon for $6,000, to be paid in instalments of $6,000 monthly, and a company incorporated, with A. Hanauer, president; Clarence K. McCornick, vice-president; J. Barnet, treasurer; J. W. Langley, secretary, who, with A. K. Tiernan, A. P. Mayberry and A. Hanauer, Jr., compose the directorate. W. H. Hood, a former lessee is to be superintendent. The property has shipped, and better copper values are expected with depth.

Summit County.

(From Our Special Correspondent.)

Anchor.—Ground is broken for the new mill, which will be erected as soon as possible.

Park City Shipments.—For the week of May 27th the ore and concentrate products sent out amounted to 2,087,011 lbs., as follows: Silver King, crude, 1,071,395 lbs., concentrates, 350,310 lbs.; Ontario, crude, 416,670 lbs.; Anchor, concentrates, 209,940 lbs.; Daly lease, crude, 37,696 lbs. Shipments from Daly West began May 29th.

Silver King.—The fine concentrating plant is being put in commission. There is a water shortage, which will soon be remedied.

Tooele County.

(From Our Special Correspondent.)

Geyser Marion.—At a directors' meeting on May 24th, A. Hanauer resigned as director; A. T. Moon was chosen to fill his place. Mr. Bamberger also resigned as director and manager and will, it is said, go to the Lucky Boy, Idaho; probably R. G. Legg will succeed him as manager.

Herschel.—Ore of better cyaniding value than ordinary is cut in winze near face of tunnel driven 2,260 ft. Exploration has been on over 3 years, and this is the first real encouragement.

Northern Light.—The first car of ore sent out since the winter blockade was shipped this week; it was expected to bring $1,500. Superintendent Legg says ore will be forwarded as rapidly as teams can be had.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Black Tail.—A cross vein shows that it is traced by several openings 380 ft. within the company's ground. One shaft shows 3½ ft. of clean quartz; a seam across the vein gave assays of $23 to $85 per ton; 75 ft. southeast a prospecting shaft is down 40 ft. and the ore averages $24.81 per ton. The main vein is traceable within the Black Tail Survey about 970 ft. and appears in open cross-cuts to be from 4 to 8 ft. wide. One shaft is 208 ft. above the level of the Black Tail tunnel and an upraise will connect it. The Surprise lead runs 392 ft. through Black Tail ground and is now exposed over 300 ft.; a sample assayed about $24 in gold and silver.

Chico Group.—The tunnel is in 75 ft.

Delta.—The shaft is down 43 ft. Assays are reported to be improving.

Dora.—The cross-cut from the bottom of the shaft is in 45 ft. and is reported to have cut a 15 in. stringer of quartz that runs $250 per ton. It is thought that the vein discovered at the surface will not be crossed for 10 days.

El Caliph.—The tunnel has cross-cut a vein at about 330 ft. in and is running on it. Orders have been issued to exclude all visitors.

Flag Hill.—The tunnel is in 40 ft.

Golden Crest.—At present only surface prospecting is done on a flat vein of rich looking quartz 2 to 3 in. thick.

Golden Chariot.—The incline is down 40 ft. on black and white quartz. The ore is not high in gold or silver.

Golden Lily.—A shaft is down on a quartz vein 20 ft., the bottom being all in quartz that assays up to $31.40 per ton.

Golden Lion.—Little Four Consolidated Mines, Limited.—The tunnel is in 276 ft. At 165 to 170 ft. in a vein shows two 5 or 6-in. stringer of quartz. From about 200 ft. in to the face is a deposit of anthracite and layers of carbonaceous material and arenaceous schists.

Gold Hur.—A tunnel is in 18 ft. on the vein, which shows quartz 18 in. thick. Assays on an average of $8.50 in gold per ton.

Insurgent.—A cross-cut has started from the shaft at 30 ft.

Lone Pine Consolidated Gold Mining Company.—The east drift ran to the Insurgent line in ore 6 ft. 1 in. thick, sampling $45 per ton, at 100 ft. below surface. The vein passes 115 ft. through Insurgent ground into the Last Chance. Surface prospecting has shown some fine looking quartz close to the grass roots.

Lone Pine.—Surprise Gold Mining Company.—The Lone Pine Pearl and Surprise companies are to be consolidated, but no definite agreement has yet been arrived at. The directors named in the articles of incorporation are: Patrick Clark, president; James Clark, vice-president; W. J. C. Wakefield, Phillip Creaser, Leo. H. Long, Chas. P. Robbins and Thomas Ryan. Chas. Eltinge is secretary.

Morning Glory.—The superintendent says the vein, a stringer of quartz 18 in. wide, runs high, but the balance of the filling is worthless. Visitors are excluded.

Mountain Lion.—The main tunnel is in 285 ft. past the center vein and nearing the east vein 10 ft. a day. The south drift, following the foot wall, is in 223 ft., all in rich ore, but the values are not given out. The north drift is being pushed. Developments are so satisfactory that a deep vertical shaft to the tunnel level has been started 500 ft. northwest of the discovery shaft and 150 ft. west of the west vein. It is down 15 ft. to the cap rock. The discovery shaft will be sunk to the south drift of the tunnel level.

Republic Consolidated Gold Mining Company.—The company has paid another dividend of 1%. Another dividend has been declared, payable June 15th. The mill treated 30 tons of ore during April of an average value of $59 per ton. Frue vanners and Wilfley tables are being set up to concentrate the tailings. Experiments are under way to get a closer saving of the gold, made difficult on account of its finely divided state. Laboratory samples of the ore and tailings have been sent to McGill University, Montreal, to be tested. As soon as the company is satisfied as to the most economical method, the capacity of the mill will be largely increased.

San Juan.—This claim on Gold Hill shows a big blow-out of quartz, which is being crosscut at the surface to find a pay shoot.

San Poil.—The North drift on No. 1 level is in 248 ft. and on No. 2 150 ft. The No. 2 is in a full face of ore, with no hanging in sight. The values are reported "fair." The No. 1 drift has been passing through a pinch, but the face is in 2½ ft. of quartz. An average value of all ore exposed is above $15 per ton.

Snow Drop.—A cross-cut at 100 ft. deep, shows the vein 12½ ft. wide between the walls, 5½ ft. being quartz. A drift runs south 16 ft. The values run from $6.19 to $17.15 in gold. A power hoist is under consideration.

Standard Snow Shoe.—This property, in the north part of Republic, about 4 miles north of the Tom Thumb mine, has a gang of men at work on the Standard.

Stray Horse.—A tunnel has been started for the vein from the east side of Granite Creek. An average assay from a surface cut shows $14 in gold per ton.

Summit.—A 12-ft. shaft is down on a quartz vein that comes close to grass roots, the quartz being about 12 in. to 3 feet wide.

Sunnyside.—A tunnel in 10 ft. toward the vein will be run 40 ft. further on the first contract. The vein is 6 ft. wide at the surface and is exposed in a shaft 10 ft deep.

Troubadour.—A new shaft is down 24 ft. on a 5-ft. vein parallel to that on which the old one was sunk. The vein is the same as that recently found on the Golden Lily. Values from $5 to $10.

Okanogan County.

La Fleur Mountain.—This is 30 miles north of Republic. As early as 1892 a location was made on the mountain and called La Fleur; it is now known as the Comstock-La Fleur Mine. A shaft was sunk 65 ft. and a good deal of bornite-gold ore taken out. It was sold a few months ago to the British-American Corporation, who have since bonded and purchased a number of adjoining claims west of the Comstock-La Fleur, the principal property is the Lone Star & Washington, owned by the Reservation Mining and Smelting Company, of Spokane. A tunnel 150 ft. is in and a shaft down 90 ft. A fine lead of gold-copper ore is opened, the assays running up to $100 per ton of ore.

(From Our Special Correspondent.)

Golden Zone.—This property is developed by 4 tunnels into Chapacca Mountain at vertical intervals of about 150 ft. The company has completed buildings to accommodate 100 men and is now installing a 60-ton concentrator, a part of the machinery being on the ground and balance en route. The property is owned by a Pittsburg company, with W. E. Garrigues in charge. The ores, by careful assays from every 3 ft. of the veins, are said to average over $30 in gold.

Hillsdale.—The last 20 ft. of sinking on this Douglass Mountain property, near Loomis, has cut a formation highly impregnated with copper. A contract for 100 ft. more sinking has been let.

WEST VIRGINIA.

Fayette County.

(From Our Special Correspondent.)

Capt. W. R. Johnson, in company with some other parties, is opening a mine on Blake's Branch of Smither's Creek. This is between the operations of the Cannelton Coal Company and the Longacre Colliery Company.

Boomer Coal and Coke Company.—This Boomer Company has contracted with the Jeffrey Manufacturing Company of Columbus, O., for an elevator with a capacity of 30 tons per hour for pea and slack coal in its new tipple, and a small conveyor to carry fuel to the boilers, a distance of 120 ft. The new plant started last fall and will be ready about June 1st. The elevator and conveyor will be run by an electric motor.

W. P. Rend & Company.—This Chicago company is working a mine on Arbuckle Creek, a branch of New River, on the Chesapeake & Ohio. The mine on Twenty-Mile Creek is not showing up as well as expected, the coal not being up to standard.

WISCONSIN.

Copper.

(From Our Special Correspondent.)

The State of Wisconsin having authorized the expenditure of $10,000 in a geological survey of the copper range running west from the Ontonagon County to the limits of Minnesota, near the St. Croix River, in Burnett County, Prof. C. R. Van Hise and U. S. Grant, the latter for years connected with the State survey of Minnesota, have been looking over the ground. The field party will be in Mr. Grant's charge, while Prof. Van Hise will be with it part of the time. Important results are expected from this work. A number of properties are under development in this district, the chief workings being Percival, Superior & Boston and Fond du Lac, all in Douglas County, a few miles south of Superior. Another, the North Wisconsin, has secured money in Boston and will push work. Machinery and power drills have been bought for the Percival.

Iron—Gogebic Range.

Bourne.—S. S. Curry has taken an option on this property, west of Hurley.

WYOMING.

Carbon County.

In that portion of the Encampment region through which runs the copper belt, considerable prospecting and development work is being done.

Cox.—This mine, on Big Creek, near the Platte River, not long ago passed into the hands of the Wyoming Consolidated Copper Company. Superintendent Poor has gone to the mine with several men to develop the property. The ore is very high grade.

Dewey.—This claim, on the east side of the Platte Valley, near the foothills of the Medicine Bow Range, is being developed. One of the owners, J. H. Mullison, is now in Denver to purchase pump, boiler and engine.

Haskins.—At this mine, between the Doane and the Rudefeha, work is progressing with encouraging results.

Meta.—This mine, near South Spring Creek, a lead-silver mine carrying some copper and gold, is being worked extensively. About 100 tons of ore are on the dump, and the first carload is on the way from the mine to the railway at Ft. Steel.

FOREIGN MINING NEWS.

AUSTRALASIA.

Tasmania.

Mount Lyell Mining Company.—This company reports that the operations for half year ending March 31st have resulted in a net profit of £111,845, after allowing for depreciation, £12,489; income tax, £5,700; and special mining exploration, £3,495. Credit balance to profit and loss account, £121,885. Liquid assets in excess of liabilities, £132,355.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Mineral Locations.—In 1898 there were 768 mineral locations recorded in the Fort Steele Division and assessment work was done to the value of $84,200. For the four years preceding and including 1898, 2,500 claims were recorded. The values do not include that on the North Star and several other developed properties. A moderate estimate places the total value of assessment work done at $300,000.

New Smelter.—Jay P. Graves, representing a Montreal syndicate, has selected a site for a smelter on the North Fork of the Kettle River, 1½ miles from Grand Forks. It is stated that this smelter is to have a capacity of 500 tons per day. The report is not yet authenticated by mining men here.

Rossland Ore Shipments.—Shipments from January 31st amounted to 48,000 tons up to May 25th, the output for the last week amounting to about 3,000 tons.

War Eagle.—The Coroner's inquest to investigate the recent accident in the new hoist, by which 4 men were killed, has rendered a verdict censuring the company and opposing the employment of uncertified engineers. The skip, containing 5 men, fell from the surface to the 625-ft. level. A nut came off a bolt and the latter fell out, causing Hull, the engineer, to fall back when he pulled a lever. This released the skip, and it went to the bottom. The fifth man escaped without serious injury and is able to go about.

Nova Scotia—Halifax County.

(From Our Special Correspondent.)

Elk.—This mine, in Caribou District, has now, at 400 ft., encountered very good ore, which is steadily improving. It is said the Guffey Jennings people are to acquire this property.

Guffey Jennings.—Development work has been very satisfactory, as removing doubts regarding deep mining. The present owners purchased it 18 months since for the sum, it was stated at the time, of $40,000, after a careful examination. The plant consisted of a 10-stamp mill and hoisting and pumping machinery, entirely inadequate. The new owners installed a modern hoisting and pumping plant, including air compressor and machine drills, some 1,000 ft. west of the old working shaft, sank a vertical shaft through country rock over 500 ft., and have cut a lode 4 ft. thick. The ore at the bottom of the shaft has yielded $7 per ton in free gold. At 40 ft. west from the shaft the lode is 8 ft. thick, and is very rich in free gold, some pieces as large as hazel nuts. It is estimated that the ore from the drift will yield several ounces to the ton. After a careful examination the company is fully convinced of the correctness of its first opinion of the value of the property, and is to erect a modern 40-stamp mill. Much of the material is already on the ground. This development work shows profits for deep mining, and the necessity of capital for Nova Scotia gold mines. The lode formerly worked was discovered some 20 years ago and varied from a few inches to 2 ft. thick at the out crop, and yielded from $2 to $20 per ton. It has been worked in a desultory manner, and yet has yielded probably $175,000.

Heatherington.—Preparations are in progress by Mr. J. B. Neily, of Boston, to reopen this mine. Also the Truro, the latter at one time yielding 200 oz. per ton from a 6-in. vein.

Tunnel.—This mine, at Waverly, is being put in shape. Power will be brought 1½ miles from Rall River lakes. It is not yet determined whether power will be conveyed by electricity or compressed air. It is now understood the purchase price is $148,000.

Nova Scotia—Hants County.

(From Our Special Correspondent.)

McNaughton.—This mine, in Randon District, has recently been sold to Worcester, Mass., people for $40,000. A. G. McDonald is the representative of the company here.

Sunset No. 2.—This company employs 27 men. The main shaft is down 390 ft., and cuts a vein 6 ft. wide. The new shaft on No. 3 vein is down 42 ft. McDreeney, the manager, says ore has been found recently on the Sunset and on the Gold Hunter.

Ontario—Rainy Lake District.

(From Our Special Correspondent.)

A. L. 181, T. 167.—The property near Bad Vermillion Lake; company will probably be incorporated and funds raised for development. Sinking has begun on 2 veins.

Golden Crescent Gold Company.—This mine will be opened under the direction of W. C. LaRue of Duluth. He is now on the ground setting up machinery.

Golden Star.—This company's May clean-up, $22,600 in bullion, 121 lbs., was received in Duluth, Minn., last week. The average free-milling value was a trifle over $19. The company has paid a June dividend of $10,000 and has declared a dividend, payable July 1st, of $11,000, its capi-

tal having been increased $100,000. In all it paid, prior to June 1st, $30,000.

J. O. 41.—It is proposed to reorganize by increasing the capital by the addition of a large amount of treasury stock, or by amalgamation with Golden Star. The latter's mill is on J. O. ground. J. O. 41 has no debt and some money in the treasury. The company never had any treasury stock, and the promoters had an undoubted legal right, if no moral one, to unload everything.

Mutual Gold Development.—This company has 18 claims near Bad Vermillion Lake. It intends to set a drill at work as soon as a machine can be taken in. The company is heavily backed by Duluth men.

Randolph Gold Company.—This company has recently commenced stripping for a vein indicated by surface showings, and has found a body of quartz some 6 ft. wide.

Voss Gold Mining Company.—This company, organized at Duluth, is beginning development on locations G 334 and 5 Clearwater Lake, northwest from Fort Francis. The company is stocked for $10,000.

Zenith Mining Company.—This company has taken in supplies and started work on locations near Sturgeon Falls.

MEXICO.

Chihuahua.

(From Our Special Correspondent.)

Chihuahua Pacific Railroad.—This road, which is expected to benefit greatly the mining industries of the State is now 39 miles west of Chihuahua. Forty-six per cent. of the traffic on the part completed consists of minerals and mineral products.

Consolidated Kansas City Mining and Smelting Company.—This company has recently opened the very old Mina Vieja in Santa Eulalia District, long celebrated on account of its terrible heat, which has caused the death of hundreds of miners in past years. It is very rich, the ore assaying 20% lead, 12 % iron and 60 oz. silver to the ton. Considerable development work will be done this summer.

Colima.

(From Our Special Correspondent.)

New Mines.—A number of new properties have been denounced on the Mille Flores Hacienda, near Manzanillo; the Maravilla, copper, by Carlos Meillon; the Encantadora, copper, by Ricardo Meillon, and the Bona Vista, copper and silver, by Arturo Le Harivel.

Lower California.

Cerro Pinto Placers.—There is much excitement at points in Southern California over the reported rich gold placer along the Sierra Pintada back of Ascencion Bay, the nearest town being Ensenada. The gold is reported to be very fine. Water is scarce and brings a high price.

Mexico.

(From Our Special Correspondent.)

Mexico Venture Syndicate, of London.—The increase of £20,000 in the capital of this company, ordered by the directors, to enlarge the development work on the property, has been all subscribed in London. The reports from the claim, just north of the Esperanza Mine, at El Oro, continue encouraging. The San Rafael vein is believed to be located. The pay streak opened in March continues good, and the ore assays $13 gold to the ton. Development shafts are being pushed to the west to cross-cut the center pay streak, found in the Esperanza Mine. The machinery ordered recently from the United States is now arriving. The new hoist and gallows frame are erected, and a large order for air compressing machinery has been slated.

Sonora.

(From Our Special Correspondent.)

Bastilla.—The new machinery for this property at Minas Prietas is on the ground, the shaft is being retimbered and it is anticipated that the shaft will be working very soon. The new hoist will be run by a gasoline engine, the first erected in this district.

La Bufa Mining Company.—This company will hereafter work the Ocotis Mill to treat its second class ores. The mill will be under the direction of Mr. Davies, assayer of the company.

Minas Prietas.—The old mill is being torn to pieces, the heavy castings being blasted apart. The ground where the pans stood so many years is said to be saturated with amalgam, worth many thousands of dollars; it will be treated and the gold and quicksilver separated.

Sultana.—Senator W. A. Clark, of Montana, has purchased this valuable copper property, about 35 miles from Magdalena, for $35,000 U. S. currency. The deal was arranged for him by J. L. Giroux, of Jerome. It is reported that extensive improvements are to be made.

SOUTH AMERICA.

Bolivia.

(From Our Special Correspondent.)

Corocorro Copper Mines.—The works of this company (Chilian capital), 55 miles from La Paz, were sacked during the revolution by the Indians of the Altiplanicia because the manager, Mr. Sanstadt sold dynamite and tools to the government, when ex-President Alonso intended to take the city of La Paz, which had been fortified in January by the revolutionary party. The manager, with his wife and the engineer of the company, Mr. Tongerson, left in disguise, on muleback, in order to reach via Concordia, on the Desagandero River, the Chilian town of Tacna, about 60 leagues distant. At the Concordia bridge they were recognized and detained. In fear of the Indians Mr. Tongerson shot first Mrs. Sanstadt, then his companion, finishing up with himself. The Chilian Company will probably put in a heavy claim for damages against Bolivia, and in case it is not recognized, armed intervention may result.

Huanuni Tin Mining Company.—The Supreme Court at Sucre has granted possession of the Huanuni tin mines to Henry Claxton Harrison in Tacna. The mines are 35 to 40 miles from Oruro, end of the Antofagasta Railway. The claim originally was taken up in irregular form about 50 years ago, under the old mining laws, but according to the new Covigo de Minas, had to be remeasured in hectareas. As this wasn't done in time, Mr. Harrison's ground was denounced by a third person and a dispute arose. The whole claim is about 130 hectares, of which about 70 belong to Mr. Harrison. The Huanuni Company is working Mr. Harrison's property, the partners being Henry Claxton Harrison, 55%, William Murray, representative of the Antofagasta Railway, 15%, Juan Minchin 15%, and Juan Hullman 15%. The claim covers hundreds of lodes, the Cataricagua being the best. It is cut by a tunnel about 400 m long at a depth of over 300 m. The production now amounts to about 1,000 to 1,200 qtls., Spanish, per month, the capacity of the establishment is about 2,000 qtls. The concentrated ore assays about 50 to 60% tin and 5 to 12% iron, and gives a profit of 15 to 18s. per qtl. Richard Waters is manager at Huanuni.

Yani Gold Mining Company.—With £25,000 capital this company was formed in London and a hydraulic plant erected at Yani, about 100 miles from La Paz. The plant had electric light and Mr. Bieber, a large shareholder, has been manager. The returns seem to have been poor, as the manager shot himself a few weeks ago.

Columbia.

American Gold Dredging Company.—This Philadelphia, Pa. company has built a steel dredge boat which is now on the way to the placer ground controlled by the company on the Atralo River. Henry G. Granger is general manager.

Peru.

(From Our Special Correspondent.)

Copper Ore.—I recently found a good vein of copper ore on Isla de Santa, 4 miles north of Chinbote. I am shipping ore carrying 25% copper and 1 oz. gold per ton from the dump, by launches, and the ore f. o. b. steamer costs $1 per ton, while extraction expenses are $15 gold per ton. I have found, also, several promising veins on the main land carrying copper, with from ¼ to as much as 3 ozs. gold per ton. Samples of oxychloride ore give as high as 46% copper. Mr. Dufourge is here representing a New York syndicate, promoted by Mr. N. L. Selleck, and is looking into some of the properties. The syndicate also interests itself in coal. Plenty of coal is found up the River Ianta, 105 kilometers from Chimbote, and it may induce the continuation of the Chimbote Railroad, as Chimbote is the best port on the coast. Such a road will open up not only the coal, but the rich gold placers and mines of Pallasca and Pataz, and the copper, gold and other mines of the whole department of Ancastro. Mr. Dufourge's party includes a civil engineer, Major Alfred Sears, and it is expected that active work will begin when the examination is completed.

COAL TRADE REVIEW.

New York. June 2.

Anthracite.

The general demand for anthracite is very light except at Boston, where very low retail prices have led to such a movement from the yards as to stimulate wholesale trade. At other Eastern points the usual summer quiet prevails. In the West the most noticeable feature is the firmness with which agents in Chicago territory have held to the agreement to refrain from naming prices for any length of time ahead. As a result, May business has been the lightest for some years. At the head of the Lakes receipts are heavy enough to keep all the docks busy. Freight rates from Buffalo are 30c. to Duluth and 50c. to Chicago, with a lot of coal waiting to go forward.

The producing interests continue to be of one mind regarding the advisability of keeping down production. There is considerable weakness in the prices of certain grades, but generally speaking the large producers are making no effort to force coal on the market. There is a pretty strong feeling that after the usual summer dullness fall trade will be active and the amount of coal sold satisfactory to all concerned. We continue to quote for free burning white ash f. o. b. New York: Broken, $3.25; egg, $3.50; stove and chestnut, $3.75.

Notes of the Week.

The Lehigh Valley Coal Company makes the following statement for April and the five months of the fiscal year from December 1st to April 30th:

	April.	Year.
Earnings	$930 428	$7,034,226
Expenses	985,217	7,371,848
Deficit	$54,789	$337,622

For the five months the gross earnings increased $1,364,915, or 23.9%, and the expenses $1,459,267, or 24.7%, leaving an increase of $94,352, or 38.8%, in the deficit.

Bituminous.

Soft coal continues in good demand. The advances in wages to miners in Pennsylvania fields has lead to demands for similar advances in the Georges Creek region by certain of the professional agitators there. This demand is not taken seriously as yet by operators, and will have to be more widespread before the situation becomes at all threatening. In any event, the West Virginia miners still fail to show any great love for organizers or other representatives of the Miners' Union, and consequently there is little chance of a general strike. This means that it is still too early to talk of higher prices for coal at the shipping ports.

The demand for vessels is steady. Arrivals at the shipping ports have been more abundant during the week, and consequently the rates of ocean freights have weakened a little. We now quote 70c. from Philadelphia to Providence, New Bedford and the Sound; and 75c.@80c. from Philadelphia to Boston and Portsmouth.

Prices remain practically unchanged on a basis of $1.60@$1.65 for best grades at Philadelphia and the Chesapeake Bay ports.

Birmingham Ala. May 29.

(From Our Special Correspondent.)

There has been no falling off in the coal output nor in the condition of the coal trade in this section so far. The warm weather has come with a vengeance, but the demand for fuel is exceptionally active and the mines have to keep up the steady lick that they have been doing for the past 10 or 12 months. The Walker County mines have a good thing in the barge line on the Mississippi River, as tow after tow of coal from that part of the State is being sent down to the Louisiana markets.

The cloud on the horizon is caused by discussion heard among the miners in reference to the new contract which is to be signed up before July 1st. There is some indication that the agreement between companies and men will not be arrived at as quickly as was thought it would be a short time since, though so far nothing can be heard as to the concessions going to be demanded by either side. At present the miners in this State are getting a higher price for their work than ever before, the selling price of pig iron being the basis for their wage scale. The miners, so it is stated, desire a different basis; but everything may pass off without a word's difference between the two sides.

Pittsburg. May 31.

(From Our Special Correspondent.)

Coal.—The feeling appears to be gaining ground that the river coal combine will go through. It is a big job, but it is being pushed along as rapidly as it is possible to do so. There are a good many knotty problems to solve, requiring time and work. Some of the operators it is said, have put a price on their property much greater than it is worth, and the promoters have this as well as many other things to investigate. The daily runs of coal from pools for the week into the Pittsburg harbor were 5,699,000 bushels.

Westmoreland operators appear granting an advance: "We must contend with cheap mined coal in the West Virginia field on eastern shipments. On western shipments the West Virginia operators are offering to take the risk of transportation of coal to the dock at the head of Lake Superior, unload it and carry it without any payment either of cash or interest until sold. This is an unheard of proceeding, that simply bars Pittsburg coal out of the market."

Coal conference seems to be off for the present—thin-vein operators make new propositions, but neither they nor miners' officials will disclose what it is, but the latter say it alters conditions.

Connellsville Coke.—The skies in cokedom are showing a brighter lining again. Production shows a slight falling off in last week's report of operations in the Connellsville region, but shipments were much better; production shows a falling off of about 1,000 tons, while the shipments show gains of over 3,000 tons.

The big furnaces that have been running short in yard room for supplies have reduced stocks considerably and without some yard extension are taking coke more rapidly now and demand is well on the boom again. Consumption of coke

is now very large, the largest in the history of the Connellsville region, and every indication points to a larger demand for Connellsville coke. The consolidation of iron interests means added strength. The strong concerns use none but the best coke and the advantage gained compels all others to hunt the best if they would keep in line with the big leaders. It is important now, however, that the best fuel is secured and to this largely is due the great increase in demand for Connellsville coke.

Summary for the week shows 18,907 ovens in blast and 2,340 idle. The production for the week amounted to 172,482 tons, decrease 173,551 tons. Shipments: To Pittsburg, 3,258 cars; points West, 4,758 cars; shipped East, 1,577 cars; total, 9,593 cars.

Shanghai, China. [April 17.

(Special Report of Wheelock & Co.)

Coal.—Business in Japan coal has been small. For Cardiff there was a slight inquiry at a considerable drop in rates, but nothing of any consequence has been done except supplies to the different war ships, which have been large and steadily reducing stocks. Of Sydney Wollongong sales to the interior have been large; the arrival of a cargo has replenished our stocks. Arrivals of all kinds of coal during the past fortnight were 17,123 tons. Quotations per ton are as follows: American, anthracite, 15 taels, nominal; Welsh, Cardiff, 19 taels; Australian Wollongong, steamer cargo, 12 taels; and other sorts, 6.75@7 taels; Japan, all contracted for; Chinese Kaiping lump, 7 taels; mixed, 5.60@6.50 taels; dust, 5.60 taels.

Kerosene Oil.—A fairly large business in American oil has been done, both by importers at 1.70 taels, less 2%, and by natives, at 1.66½ taels per case, but the market does not close very strong, as very little speculation has taken place for some time past. With the arrival of 60,000 cases, stocks amount to 651,178 cases. In Russian Batum a large business has been done at slightly lower prices and the market is firm. Stocks are 261,500 cases. Sumatra Langkat has also been dealt in considerably, but mostly in loose oil from the tanks, at about 13½c. per gal.; tin oil being little inquired for. Stocks are 37,200 cases. Quotations per case are as follows: American Devoe's, 1.66½ taels; Russian Anchor Chop, 1.56½ taels; and Star and Crescent Chop, 1.57 taels.

SLATE TRADE REVIEW.

New York. June 2.

Exports from Baltimore this week were 103,759 pieces (262 short tons) to Dublin, Ireland.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries is given below.

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.40	3.00	3.50	3 50	4.85	2.65	3.50	.....
24 x 12	6.60	3.40	4.00	3.50	3.50	5.00	2.75	3.50	.....
22 x 14	6.10	.....	.....	.....	..	5.00	2.60	3.50	.....
22 x 12	6 60	3.40	3.00	3.50	3 50	5.00	2.75	3.50	..
24 x 11	6.50	3.60	3.25	3.50	3.75	5.00	2.75	3.75	.....
20 x 14	6.40	.....	.....	.....	.....	.....	2.60	3.50	.....
20 x 12	6 90	3.60	3.25	3 50	3.75	5.00	2.75	3.75	.....
20 x 11	6.80	.....	.....	3 75	..	5.00	2.75	3.75	.....
20 x 10	6 80	4 25	3.25	3.75	3.80	5.10	2.90	4 00	10.50
18 x 12	6.80	3.60	....	3.50	....	5.00	2.75	3.50	....
18 x 11	7.00	....	....	....	....	5.00	2.75	3.75	....
18 x 10	7.20	4.25	3.25	3.75	3.80	5.10	2.90	4.00	10.50
18 x 9	7.10	4.25	3.25	3.75	3.80	5.10	2.75	4 00	10.50
16 x 12	6.80	3 60	....	3.50	....	.....	2.60	3.50	....
16 x 10	7.10	4.00	3 25	....	3.80	....	2.60	4.00	10.50
16 x 9	7.00	4.00	....	3.75	3.80	5.10	2.60	4.00	10.50
16 x 8	7.20	4 25	3.25	3.75	3.80	5.10	2.60	4 00	10.50
14 x 10	6 60	3.60	3.25	3.35	3 75	5 00	2.50	3 75	10.50
14 x 9	6.50	....	....	.....	3.40	4.85	2.50	3.75	10.50
14 x 8	6 60	3 60	3.25	3.35	3.40	4.85	2.50	4.00	10.50
14 x 7	6.40	3.60	3 25	3 35	3.40	4.85	2.40	4.00	10.50
12 x 10	5.80	....	....	....	.....	4.60	2.40	3.25	.....
12 x 9	5.60	....	....	....	....	4.60	2.40	3 25	....
12 x 8	5.50	3.25	.....	3.35	3.25	4 60	2.40	3.25	9.00
12 x 7	5.00	3.25	.....	3.35	3.25	4.60	2.40	3.25	9.00
12 x 6	4.80	3 25	....	3 35	3.25	4.60	.....	3 25	8.50

A square of slate is 100 sq ft as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3/16 in. thick, and Peach Bottom 25c. extra per square. Purple sizes run 24x12 and 14x7, and vary from $3.75 to $4 per square. Variegated purple, $2.25@$2.90 per square, according to size. Intermediate red, 14x7 and larger, $6; 12x7 and 12x8 in., $5 per square, net. Intermediate sea green, $2.15@$2.35 per square according to size.

Quarrymen report orders plentiful, while stocks of slate are small, and it is said several weeks will pass before the necessary deliveries can be made. In roofing slate prices of Pen Argyl have been advanced 10 to 25c. per square by dealers, and it is expected that Bangor ribbon will be raised by July 1st, as the demand exceeds the supply just now. In red roofing slate efforts are being made by a new concern to undersell the Eagle quarries $1.50 per square. Sea green is well contracted for.

Mill stock is stronger, owing to a shortage of slate at the quarries.

In export circles orders are being delayed somewhat as the desirable sizes of roofing slate are limited. We understand the large exporter to Cardiff has recently loaded a quantity of roofing slate for that market. This concern has a time charter with a steamship company, at about 7s. per ton. Of late much sea green and "dampers" or rough slate has been sent abroad. Some mill stock has also gone forward. Freight rates from New York are as follows: To London, 12s. 6d. ($3), or about 86c. per square roofing slate; Liverpool, 12s. 6d.; Manchester, Bristol, Leith and Glasgow, 15s. ($3.60), or $1 per square; Hamburg, 12s. 6d. prompt, and 15s. near future; Copenhagen, 16s. 3d. ($3.90), or $1.11 per square; Newcastle and Hull, 17s. 6d. ($4.08), or $1.17 per square; Denmark, Stettin, 17s. 6d., all with a 5% primage per ton weight. To Bremen the rate is 15s. net ($3.60), or $1 per square. To Sydney, New South Wales, 15s. net is asked for roofing slate in cases or in bulk.

CHEMICALS AND MINERALS

(For further current prices of chemicals, minerals and rare elements, see page 662.)

New York. June 2.

Heavy Chemicals.—Domestic chemicals for prompt shipment continue scarce, and quotations are generally on future deliveries. Chlorate of potash is being produced at the Bay City, Mich., works at the rate of 50,000 kegs per annum. Bleaching powder is in good demand at unchanged prices. Imports included 164 casks, 124 bbls. and 25 boxes bleaching powder. Receipts of domestic goods at New York included 415 kegs chlorate of potash, 300 drums, 550 kegs, 135 sacks, 445 bbls., 306 pkgs., and 316 cases soda ash, and 75 bags and 25 bbls. bicarb. soda. Exports were small and included several hundred kegs bicarb. soda to Sydney, New South Wales.

Quotations are as below, per 100 lbs.

Articles.	Domestic.		Foreign,
	F.o.b. Works.	In New York.	In New York.
Alkali, in bags.	62½@65c.	....	75@80c.
Caustic Soda, high test	$1.42½@$1.45	....	$1.6@$1.70
98% powd.	.....	$2.75@3.00	.. . .
Sal Soda	50c.	....	60@62½c.
" conc.	1.00@1.35	....	1.65@1.75
Bicarb. Soda	1.12½@1.25	1.22½@1.35	2.12½@2.25
" " extra	3.25@3.50	....	
Bleach. Pdr., Eng. prime	.....	....	1.45@1.50
other br'nds.	.....	....	1.30@1.35
Chl. Pot. cryst	....	9.00@9.50	9.50@9.75
" powd.	....	9.50@10 00	10.00@10.50

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Acids.—Market is quiet and deliveries are mostly on contract. Blue vitriol exports are limited. For oxalic acid the syndicate has raised the price of the "Pritchard" brand to 8¾, but the others remain $6¼@$6½ per 100 lbs. Only 15 bbls. oxalic acid were received this week at this port.

In large lots delivered in New York and vicinity, per 100 lbs unless otherwise specified.

Acetic, com. No 8.	$1.45	Nitric, 38°.....	3.75@ 3.80
Blue Vitriol, best.	5.25@ 5.50	Nitric, 40°	4.0 @ 4.05
Chamber, 50°, ton.	11.50@12.00	Nitric, 42°.....	4.62@ 4.65
Muriatic, 18°. ...	1.10@ 1.15	Oxalic	6.25@ 6.50
Muriatic, 20°. .	1.20@ 1.25	Sulphuric 66°	1.10@ 1.15
Muriatic, 22°.....	1.35@ 1.40	Sulphurous, 100%	
Nitric, 36° .....$3.50@ 3.55		SO_3 anhydrous.	8.00@10.00

Brimstone.—Demand is small and for best unmixed seconds to arrive $20.50@$20.75 per ton is asked, while thirds are $2 less. The French steamer "Alesia," for New Orleans, from Marseilles, May 19th, had her cargo of sulphur on fire and put into Algiers in distress.

Pyrites.—The shipments from the Virginia mines in May were heavy and orders are being received for double the quantity of pyrites it is possible to turn out just now. A new demand exists for pyrites for the manufacture of phosphide of sodium, which is used in making fabrics of all kinds uninflammable. Bids are asked now for 20,000 tons of pyrites for this purpose. Of the charters to carry ore from Huelva we note two British steamers of 1,535 and 1,403 tons to the Atlantic coast at 11s.@11s. 3d. In 1898 we imported from Huelva 125,919,790 kilos lump and 1,219,720 kilos smalls copper pyrites and 4,464,180 kilos iron pyrites. Spanish pyrites contain from 46% to 51% sulphur, the American from 42% to 44%, and Pilley's Island, N. F., about 50%.

Quotations on American are: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines, $3; Charlemont, Mass., lump, $5, and fines, $4.25 per long ton; Pilley's Island, lump, $6.50, and fines, $4.50 per long ton, delivered in New York. Spanish pyrites, 11@13c. per unit, according to percentage, delivered ex-ship New York or other Atlantic coast ports.

Fertilizing Chemicals.—Business is quiet and prices firm. Sulphate of ammonia, gas liquor, is higher. Imports included 750 bags sulphate of potash and 500 bags manure salt. A fair export trade is reported, especially in blood.

Articles.	F. o. b. Wks.	In N. Y.
Potash, muriate, 80@85%, 100 lbs.	....	$1.78
" " 95% "	.. ..	1.81
" sulphate, 90% "	.....	1 98½
" " 96% "	.....	2.10½
" d'ble m're salt, 48@ 3% 100 lbs	....	66c.
" " " 3% "	....	89c.
" kainit, 12.4%. long ton.	.....	8.70@8 95
" sylvanit..... per unit.	.....	37@38c.
Sulph. Am., gas (25%).. 100 lbs.	.....	3 20
" " bone .... "	.....	3.00
Blood, dried, h-gr, Chi. per unit	$1.85	....
" " " N.Y., "	....	1.85@1.90
Azotine ..... "	... .	1.85@ 1.95
Bone black, diss., 17@18%...ton	.....	16.00@16.50
Fish scrap, acid ..... "	11.00	.....
" " dried ..... "	19 50@20	.....
Tankage, h. gr., Chicago.... "	17@17.50	21.00
" concentrated.. unit.	....	1.90@1.95
" bone. .... ton.	.....	20.00@21.00
Bone, ground ..... "	....	23.50@25.00

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

Nitrate of Soda.—No arrivals at this port, and buying is small at $1.57½@$1.60 per 100 lbs. for spot and $1.55@$1.57½ for futures. The shipments in May to Europe from Chile are estimated at 63,600 tons and loadings on June 1st, 25,000 tons. The deliveries in Europe in the first half of May are reported at 55,000 tons.

Phosphates.—Demand is good, though export business is quieter. The shipments of high-grade Florida rock in May are estimated at 45,000 long tons, against 59,001 tons in April, as reported by Messrs. Auchincloss Brothers. The total shipments from January 1st to May 1st, inclusive, were 163,242 long tons, as against 94,855 tons in the corresponding period of 1898. The distribution was as follows: Continental ports, 102,013 long tons (53,668 tons, 1898); Baltic ports, 37,982 tons (19,311 tons in 1898); United Kingdom ports, 19,080 tons (11,755 tons in 1898); Japan, 1,000 tons; New South Wales, 2,250 tons, and domestic ports, 917 tons. Latest quotations for American phosphates delivered c. i. f. United Kingdom or North Sea ports are as follows: Florida hard rock, 77@80%, 9⅜d. per unit, all positions (about $15 per long ton); Florida land pebble, 68@73%, 7¾d. ($11 per ton); Florida Peace River, 58@63%, 7¼d. ($8.40 per ton); Tennessee, 78@80%, 7¾d. per unit, or about $12.64 per long ton. South Carolina rock is about 6½d. per unit, while Algerian, 58@63%, is held at 7d. Charters noted in New York recently were a British steamer of 1,400 tons from Port Royal to Dublin at 14s. 3d., June 15th sailing; one of 1,709 tons from Fernandina to the United Kingdom or Continent at private terms, and one of 1,630 tons from Brunswick to Rotterdam at 16s., June-July sailing.

We quote: Florida high grade, 75@80% rock, $9.50@$10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, quoted at $7@$7.50 per ton delivered in New York; South Carolina ground rock, $6 per short ton, delivered in New York; sun dried, $3 per 2,240 lbs. f. o. b. Ashley River; hot-air dried, $3.25 f. o. b. same place, and $3.45 f. o. b. Charleston, S. C. Tennessee phosphate rock, $4@$4.50 f. o. b. mines for export, guaranteed 78% bone phosphate of lime and 3%@4% iron and alumina, and $3@$3.50 for domestic brown, and $1.90@$2 f. o. b. for blue or Hickman County rock. Ex-vessel, New York, $9@$10 for high grade rock. Domestic Tennessee rock averages 75%, while for export it runs as high as 83% bone phosphate. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock. Acid phosseller's works in bulk. Concentrated phosphates, 13@15% av. P_2O_5, 60@62½c. per unit at phates, 57½c. per unit.

Liverpool. May 23.

(Special Report of Joseph P. Brunner & Co.)

There is little change to report in the position of heavy chemicals, and trade generally is on a restricted scale owing to the Whitsuntide holidays.

The annual report of the Castner-Kellner Alkali Company has recently been issued, and shows a net profit for the 12 months ending March 31st last of £29,554. An interim dividend at the rate of 8% was paid for the six months ending September 30th, 1898, and the directors now propose to pay a similar dividend for the 6 months ending March 31st last, writing off £2,784 preliminary expenses, £5,000 for depreciation, and carrying forward £5,341.

Soda ash is well controlled by makers, while quotations vary according to market. We quote maximum range for tierces about as follows:—Leblanc ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton. Ammonia ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s. per ton net cash. Bags are 5s. per ton under price for tierces. Soda crystals are in demand and generally quoted at £2

17s. 6d. per ton, less 5% for barrels, with a special range for certain favored markets. Bags are 7s. per ton under price for barrels.

Caustic soda is quiet but steady as follows:—60%, £6; 70%, £7; 74%, £7 10s.; 76%, £7 15s. per ton, net cash.

Bleaching powder is in fair request, and hardwood is quoted at £4 17s. 6d.@£5 per ton, net cash.

Chlorate of potash has been moving off more freely, and is firm at 3½@3¾d. per lb. for crystals, and 3⅝@3¾d. per lb. for powdered, as to quantity.

Bicarb. soda is in moderate demand at varying prices according to destination, ranging from £5 5s.@£6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia, with limited supplies, continues in a strong position, and is nominally quoted on spot at £12 17s. 6d.@£13 per ton, less 2½% for good gray 24@25% in double bags f. o. b. here.

Nitrate of soda is not active, but there is a fair trade passing at £8 5s.@£8 10s. per ton, less 2½% for double bags, f.o. b. here, as to quality and quantity.

Valparaiso, Chile. April 22.

(Special Report of Jackson Bros.)

Nitrate of Soda.—The bulk of the business done in this article has been for early deliveries of 95% at from 4s. 7½d.@4s. 8d. steamer terms, several cargoes of arrived vessels having to be provided for. Some interest was shown for August 95% at 4s. 9d. and for September-November at 4s. 9½d., both steamer terms; but producers will not entertain these prices. The refined quality is held firmly for 5s. The production for March was 2,470,000 qtls., making a total for the first three months of this year of 6,768,000 qtls., against 6,960,000 qtls. during the same period of 1898. We quote: 95% May, 4s. 7½d.; June-July, 4s. 8d.; August, 4s. 9d.; and September-October, 4s. 10d., all ordinary terms. The price of 4s. 7½d. with 28s. 9d. all round freight stands in 6s. 7d. per cwt. net cost and freight without purchasing commission. Sales reported are 495,000 qtls., of which only 53,000 qtls. were 96%, at 4s. 10½d.@5s. 1½d., and the balance 95%, at 4s. 7½d.@4s. 9d.

IRON MARKET REVIEW.

NEW YORK, June 2, 1899

Pig Iron Production and Furnaces in Blast

Fuel used	Week ending June 3, 1898		Week ending June 2, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces.	Tons.	Tons	Tons
An' racite	26	17,600	37	32,450	406,216	616,949
Coke.....	144	202,225	160	213,900	4,573,671	4,572,845
Charcoal.	20	6,925	20	4,925	129,096	112,508
Totals..	190	226,750	217	251,275	5,108,983	5,302,102

The rush to buy raw iron and steel continues, and prices are higher than before. Bessemer pig has sold this week at $18.30 in Pittsburg, and $17.65 at Valley furnaces; while foundry iron is high in proportion. The demand for billets has also carried prices up again. The comparative table which will be found in our Pittsburg letter is instructive and striking, especially when we remember that further rises are quite possible, if the present unreasoning mood of buyers lasts.

Furnaces continue to go into blast, and the producing capacity will increase as fast as repairs can be made. The production of iron ore is also being increased, and mines are being reopened and exploited in the East. Of course, some time will be needed to complete all the preparations, but some additions are being made daily, and each week there is less justification for the alarm of short supplies which is still sounded in some quarters.

Notes of the Week.

The Amalgamated Association of Iron and Steel Workers at Detroit voted to fix the boiling scale on the basis of $5 a ton for boiling on a 1.3 cent card, with 25c. a ton advance for every advance of 0.1c. in the card rate. The present scale is based on $4 a ton, so that the puddlers have asked a clean advance of 25 per cent. The old scale was one-eighth of the straight price for boiling. This has also been advanced in the new scale, and muck rollers asked one-seventh of the straight price for puddling. With puddling at $4 a ton, the muck roller got 50c., while at $5 a ton he will get a fraction over 70c. The boiling scale, as adopted at Detroit in full, is as follows: Base rate, $5 a ton, with bar iron at 1.3c.; $5.25, with bar iron at 1.4c.; $5.50, with bar iron at 1.5c.; $5.75, with bar iron at 1.6c., and $6, with bar iron at 1.7c. The charge for boiling furnaces shall be as follows: Single furnaces, not more than 550 lbs. per heat; double furnaces, not more than 1,100 lbs. per heat; Siemens furnaces, not more than 1,500 lbs. per heat; double furnaces, not more than 2,200 lbs. per heat, and it is understood that two weeks' work shall be averaged. Extra charges of $1 a ton are to be allowed when working dephosphorized iron or Bessemer pig alone.

Birmingham, Ala. May 29.

(From Our Special Correspondent.)

The pig iron market in the Birmingham District seems to be in a sensational mood. If all reports are true there will be more orders offered in this section in the near future than can be comfortably accepted. The furnaces in blast now are having a little job to keep up with the present demand, and some of the furnaces have sold up considerably ahead. The report of sales of very large blocks of pig iron in the North has given an impetus to the feeling in this section that is wonderful, and on all sides it is heard that large blocks of the product are being contracted for here, too.

The quotations given for the product are as follows: No. 1 foundry, $12.50; No. 2 foundry, $12; No. 3 foundry, $11.75; No. 4 foundry, $11@$11.50; gray forge, $10.75; No. 1 soft, $12.50; No. 2 soft, $12.

It is believed that before the end of another fortnight the demand for the product will have brought an equalization in the quotations, which means that another advance of from 25c. to 50c. on the ton will be made.

The Vanderbilt Furnace and another Alice furnace are the next to go into blast in the district and it is expected that both will be making iron by the last of June, if not before that time.

The foundries report work good with plenty of orders for the future on hand. These people who buy in small lots complain of the high price of pig iron and of their inability to get more than a supply for two or three weeks at a time. The Williamson Iron Company, with a big foundry and machine shop in the city, is just turning out some large sugar machinery for Louisiana parties. The Hood Machine & Foundry Company has more work on hand almost than can be attended to.

Scrap iron is being dealt in actively in and around Birmingham, as the foundries are having a good run in trade. Recently the Hood Machine Company, of this city, bought all the scrap resulting from the dismantling of the Woodstock Furnace, nine carloads, mostly good charcoal iron. It was put up when charcoal iron was by far more plentiful than coke iron, the reverse being the case now.

Cleveland, O. May 31.

(From Our Special Correspondent.)

Iron Ore.—Agents of the iron mining companies are making no active effort to sell more ore. Before making more sales they wish to be more fully assured in regard to the filling of the orders already booked. On account of the strike and other causes, not more than about half of the volume of ore was shipped from the upper Lake ports during the month of May than was expected. There seems therefore to be some uncertainty as to the delivery of that already sold, and hence there is no anxiety to make further sales. Very few additional sales are therefore expected until more has been accomplished in delivering the already sold ores. The anxiety to push the shipment of ores from the upper Lakes has made a strong demand for vessels and carrying rates are consequently higher. The present rates are 60c. from Escanaba, 65c. from Marquette, and 75c. from Ashland and the upper head of Lake Superior.

The quotations are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@$3.75; red hamatite ores, Bessemer quality, $3.75@$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market continues very firm and very active. Very fair transactions are reported all along the line, this being especially the case in foundry and fairly in Bessemer metal. Higher prices are reported for all kinds of iron except charcoal and gray forge. Notwithstanding that prices are already very high, the tendency is toward still higher market values. The following are the present quotations for iron f. o. b. Cleveland: Lake Superior charcoal, $20; Bessemer, $17.65; No. 1 foundry, $17; No. 2, $16.65; No. 1 Ohio Scotch, $17; No. 2 Ohio Scotch, $16.75; gray forge, $15.

Philadelphia, June 1.

(From Our Special Correspondent.)

Pig Iron.—The only change in the situation is that fewer actual sales have been made. There are a good many foundrymen renewing or trying to renew their engagements. Furnacemen, agents and brokers are all stronger in the belief that prices are coming their way, and that current rates will not last long into June. It is surprising how many customers there are who are nearly out of iron. Fortunately they are small consumers. There is a struggle for iron, but the sufferers avoid admitting it. Higher than quoted prices were paid for iron, but the following may pass for prices as they are today. No. 1 X foundry, $17.50; No. 2 X, $17; plain, $16.50; standard mill iron, $16@$16.25; basic, $16. A good many buyers are in a bad way, because the supply of iron is short, and they must have it or quit work.

Billets.—Private information to-day from mills has again unsettled calculations and brought disappointment to some expectant buyers, who have been expecting to secure the promises of stock at lower prices than are quoted to-day. Quotations are given all the way from $30@$31. Heavy deliveries are being made.

Merchant Bar.—The merchant bar mills are crowded with business, and a larger volume is appearing in sight. Car builders are again in the market, but up to to-day their contracts do not size up. The bulk of our business is on small lots, and the average price for common iron is 1.50c.; refined, 1.60@1.70c.; tested, 1.75c. Special bars have brought as high as 2c.

Skelp.—Skelp iron and steel makers report themselves unable to take any new business, but at the same time they are letting regular customers in. Contractors are working very close, and operators are sometimes threatened because material has not arrived.

Sheet.—A reviving demand is now here; that is, old customers are extending orders and calling for more material. Corrugated material is wanted badly. Light sheets for the present are dull. Prices firm at card rates, 2.60@3.20c.

Merchant Steel.—The chief feature to note is that prices have been again advanced, much to the surprise of buyers, who expected to be taken care of at quotations as they were a month ago. The local agents all say that business was never better, and that the busiest season ever known is now on.

Pipes and Tubes.—The monotonous report of previous weeks can only be repeated, with emphasis. We must now expect the combination to stamp its influence on the trade.

Plates.—The situation is about the same, excepting that material could not be ordered at last week's prices. Mill owners do not say they have advanced prices, but they do say they are not able to furnish material at such prices, or for that matter, at any prices. Some of those who have been waiting patiently for weeks to get their orders entered now see daylight. There are enormous requirements, however, to be filled, and it is impossible to say how soon plate mill production will take care of demand. Quotations are given: 2.30@2.40c. for oven plate; shell, 2.45c.; flange, 2.60c.; fire-box, 2.70@2.80c. These are not reliable figures, however.

Structural Material.—The mills are overrun with business, and any multiplication of words would not make the matter any clearer. High prices have been paid and are to-day being offered for summer deliveries.

Steel Rails.—Quotations unchanged and business active.

Old Rails.—Large deliveries are being made at $18@$19.

Scrap.—There is a struggle to get scrap, and very little really desirable scrap is to be found not taken up by contract. No. 1 railway scrap is $18.50@$19; steel axles, $17.50; iron, $21@$22; heavy steel scrap, $14; old car wheels, $15@$15.50.

Pittsburg. May 31.

(From Our Special Correspondent.)

Raw and finished material continues to advance all along the line, sales being made at various prices. High prices for iron are a sure indication of general prosperity, but when production has been increased to extreme limits, and prices have nearly doubled, it is time to put out the danger signal. It should not be understood that there are any signs of immediate reaction—quite the contrary—but that beyond a certain limit high prices do not and will not check consumption is beyond question. The export trade, for instance, is hardly taken into account now, and as that alone was equivalent to 700,000 to 800,000 tons per annum, there will probably be a considerable shrinkage during the balance of the year. The demand for all kinds of material is very large, however, and will doubtless continue so for an indefinite period, but the natural result of high prices is to expand production, and beyond a certain point to curtail consumption. The following is the price of iron and steel one year ago, compared with last week's quotations:

		1898.	1899.
May 27.....	....Bessemer, Valley.....	$9 60	$17.85
"	Mill iron, "	8.90	15.50
"	Billets, "	14.85	28.35
"	Sheet bars, "	16.95	28.75

The Pittsburg prices for the above articles are higher by the freight, which is 65c. a ton. The highest point yet: Sales to-day include a large Valley sale at $17.65, equal to $18.30 Pittsburg, and a sale of 5,000 tons at $17.85, equal to $18.50 Pittsburg. The end is not yet.

Finished Material.—There is no abatement in the demand, consequently prices are firm at the highest point yet reached. It is surprising to everybody in the trade to see such a continuous and ever-widening volume of business, but there seems to be absolutely no end to it. The most satisfactory feature is that all departments feel it the same way, showing that it is not some particular interest or some special class of work that is in progress, but that the activity is universal. A great deal of work has been declined during the past week simply because it cannot be handled. Prices tend upward.

Sheet bars firm, scarce, with sales f. o. b. at mill $28.75 Pittsburg.

Muck bar very scarce, market firm, prices advancing.

Skelp Iron and Steel.—The market rules firm under light supplies; prices are to a certain extent nominal and very uncertain. Skelp iron, sheared, $2.25, 4 mos.; grooved, $2.40, 4 mos.; skelp steel, grooved, $2; sheared, $2.15.

Charcoal Iron.—Prices firm; holders asking higher prices.

Scrap material and old rails are very firm and advancing, with sales firm $1.50 to $3 above the quotations.

Ferro-manganese.—Market firm, higher; sales $80@$85 delivered.

Wire nails steady, but very firm, with sales $2.20; the tendency in prices being upward.

Wrought iron and steel pipe trade is active; the mills are employed to their fullest capacity; so far prices have shown no change.

Latest.—The iron market is as unsettled as ever; there is no fixed price. Pig iron is selling at 25c.@30c. above prices fixed by the combination. Certain customers must have iron, prices being a secondary consideration. Buyers hardly know which way to turn to get their requirements covered. How long this condition of affairs will continue is something that cannot be found out.

COKE AND COAL SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
20,000 B., J., A., S., O., V.	$17.65
5,000 B., S., O., V.	17 85
5,000 B., J., P.	18.25
5,000 B., J., A., S., V.	17.50
4,000 B., J., P.	18 25
3,000 M. I., J., P.	15.30
3,000 B., J. to D., V.	17.50
2,500 Bessemer, J., P.	18.25
2,000 M. I., J., A., P.	15.30
1,500 B., J., A., S., V.	17.50
1,500 No. 2 F'dry, J., P.	16.28
1,000 No. 2 F., J., J., P.	16.35
1,000 M. I., J., P.	14.85
1,000 B., J. to D., V.	17.65
500 B., J., to O., V.	17.00
400 No. 3 F'dry, P.	15.60
200 No. 2 F'dry, P.	16.09
150 No. 2 F'dry, P.	17.00
150 No. 1 F'dry, P.	18.75
125 No. 1 F'dry, P.	18.50
125 No. 2 F'dry, P.	17.00
125 No. 2 F'dry, P	17.00
100 No. 2 F'dry, P	16.75
100 No. 2 F dry, P.	17.00
60 No. 2 F'dry, P.	16 90

OLD IRON AND STEEL RAILS.

2,000 Iron Rails, gr., P.	20.25
1,000 Iron Rails, gr., P.	20.00
500 Steel Rails, gr., P.	13.75
500 Iron Rails, gr., P.	20.00
500 Steel Rails, gr., P.	15.25

BASIC IRON.

1,500 Prompt Del'y, P.	16.25

SCRAP MATERIAL.

Tons	Cash.
1,500 H. S. S., gr., P.	$13.75
1,000 W't. S., net, P.	16.00
500 Cast Scrap, gr., P.	13.00
500 H. M. S't'k, gr., P.	14.75
500 W't Scrap, net, P.	16.00
500 Cast Scrap, gr. P.	14.50
300 Turnings, net, P.	11.00
300 Turnings, gr., P.	10.00
300 Cast B'gs., gr., P.	9.00
300 O. C. W., gr, V.	16.50

CHARCOAL.

300 No. 2 W. B., P.	17.50
200 No. 2 W. B., P.	17.50
200 No. 5 W. B., P	18.00
125 No. 2 C. B. ex P.	27 00
100 No. 2 W. B., P.	17.50
100 No. 2 F'dry, P	16.50
50 No. 2 F'dry, P	16.50
25 No 4 C. B., P.	24.00
25 Cold Blast, P.	23.00
25 Cold Blast, P.	21.50

BLOOMS, BILLETS, SLABS.

900 Billets, J., P	28.00
750 Billets, J., J., P.	28.25
575 Billets, pt. del., P.	29.00
500 Billets, J., P	28.00
500 Billets, J., J., P.	29.00
250 Billets, J., P.	28.20

SHEET BAR.

2,000 S., O., f.o.b. M., P.	28.75

New York June 2.

The market shows no material change, demand in all lines continuing good. In foreign business we note shipments of $62,000 worth of machinery and $5,000 worth of agricultural implements to Russia; $100,000 worth of agricultural machinery to Norway and Sweden, and $11,000 of machine tools and a lot of iron pipe to Denmark.

Pig Iron.—There is a fairly good movement in foundry iron for immediate used. Speculative buying is light. We continue to quote: Northern brands, tide-water delivery, No. 1 X foundry, $17.25; No. 2 X foundry, $16.50; No. 2 plain, $16; gray forge, $15.75; Southern brands, New York delivery: No. 1 foundry, $16.50; No. 2 foundry, $16; No. 1 soft, $15.75; No. 2 soft, $15.50; No. 3 $15; basic, $15.25. These prices are nominal. We know of one small lot of No. 1 selling for $19. Regarding sales, we note that an iron trade paper, in its issue of June 1st, reports a sale of 5,000 tons of No. 1 Schenectady. This sale was made as long ago as May 12th and the house that sold the iron has made further sales in the same quarter of 6,000 tons.

Warrant irons during the week have been generally quiet, Alabama foundry No. 2 selling at $12¼; No. 3, $11¼; No. 4, $10⅝; gray forge, $10⅝.

Bar Iron.—The demand continues excellent and the market is strong, with refined iron 1.80c. in large lots on dock and common 1.70c.

Plate.—The local demand is but fair. Large lots at tide-water are quoted: Tank, ¼-in. and heavier, 2.45c.; tank, 3/16 in., 2.55c.; shell, 2.55c.; flange, 2.56c.; marine, 2.75c.; fire box, 2.85c. The market remains very strong.

Steel Rails and Rail Fastenings.—Prices still are about $27 for standard sections f. o. b. mills, with a light demand limited to small orders. Small rails are quoted: 12-lb., $34; 16-lb., $32; 20-lb., $32; 25-lb., $30; 40-lb. to standard, $28, with the usual advance for small orders. Angle bars are 1.35c.; spikes, 1.75c., and bolts, 2.15c.

Structural Material.—The market continues firm, and we quote for large lots at tide-water: Beams, 15-in., 1.70c.; tees, 1.70c.; channels, 1.70c.; angles, 1.57c.

Nails.—There is a good demand for both wire and cut nails. Quotations continue firm at $2.35 for wire nails and $1.95 for cut nails in large lots on dock.

METAL MARKET.

NEW YORK, June 2, 1899.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in April and year.

	April.		Year.	
	1898.	1899.	1898.	1899
GOLD.				
Exports	$1,323,724	$1,162,484	$5,741,506	$4,927,672
Imports	32,579,858	2,472,123	75,944,273	16 874,684
Excess	I. $31,256,134	I. $1,309,639	I. $70,202,767	I. $11.947,012
SILVER.				
Exports	4.099,161	4,082,567	16,256,915	19,290,270
Imports	2,091,066	1,849,231	9.289,757	8 993,835
Excess	E. $2,008,095	E. $2,233,336	E. $6,967,158	E. $10.296,435

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending June 1st, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports	
We'k	$12,000	$1,976	$666,042	$60,790	E. $615,276
1899..	2,913,298	6,230,748	11,442,488	1,292,907	E. 6,832,631
1898..	4,441,939	68,910,978	14,415 692	1,749,066	I. 51,802,243
1897..	10,621,617	1.569,825	17,517,306	1,110,781	E. 15,518,347
1896..	28,283,442	16,905,131	15,822,371	899,394	I. 26,304,338

Imports and exports of gold were light, and were in small parcels from and to various ports. Exports of gold were nearly all to London; imports were from the West Indies and South America.

The United States Assay Office in New York reports the total receipts of silver at 102,000 oz. for the week.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .49	$ 51
Peruvian soles and Chilean pesos	.43¼	46
Victoria sovereigns	4.85	4.87
Twenty francs	3.85	3.88
Twenty marks	4.74	4.78
Spanish 25 pesetas	4.78	4.84

Average Prices of Silver per oz. Troy.

Month.	1899.		1898.		1897.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents	Lond'n Pence.	N. Y. Cents.
January	27.42	59.36	26.29	56	29.74	64.79
February	27.44	59.42	25.89	56.0	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63.06
April	27 65	60.10	25.95	56.02	28.36	61.85
May	28.15	61.23	26.31	56.98	27.86	60.42
June			27.09	58.61	27.58	60.10
July			27.32	59.06	27.36	59.61
August			27.48	59.54	24.93	54.19
September			28.05	60.68	25.66	55.74
October			27.90	60.42	26.77	57.57
November			27.93	60.60	26.87	57.93
December			27.45	59.42	26.83	58.01
Year			26.76	58.26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.
Jan	14.75	10.99	22.48	13.87	4.18	3.65	5.34	3.96
Feb	18.00	11.28	24 20	14 08	4.49	3.71	6.28	4.04
March	17.54	11.98	23.82	14.38	4.37	3.72	6.31	4.25
April	18.43	12.14	24.98	14.60	4.31	3.63	6.67	4.26
May	18.25	12 00	25,76	14.52	4.44	3.64	6.88	4.27
June		11.89		15.22		3.82		4.77
July		11.63		15.60		3.95		4.66
August		11 89		16.23		4.00		4.58
Sept		12.31		16.03		3.99		4.67
October		12.41		17.42		3.78		4.98
Nov		12.86		18.20		3.70		5.29
Dec		12.93		18.30		3.76		5.10
Year		12.03		15 70		3.78		4.57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.13c; in May, 17.20c.

Financial Notes of the Week.

General business continues on a large scale, and is not at all affected by the rather bearish tone of the stock market. The weekly bank clearings and the reports of railroad earnings continue to show large gains in the volume of trade as compared with last year.

Money in New York is fairly easy, and there is no difficulty in securing loans at moderate rates. Foreign exchange has advanced again, and the sterling rates are now close to the point where it will pay to ship gold to London. It is quite possible that we may see some exports of gold shortly, though the movement is not likely to be a large one. That such exports should be made or even be probable when the apparent

Imports and Exports of Metals.

Port.	Week, May 31		Year, 1899.	
	Expts.	Impts.	Expts.	
***New York.**				
Aluminum ..... long tons	.....	.....	239	10
Antimony ore .. " "	.....	‡130	.....	733
" regulus.. " "	.....	‡10	.....	459
" oxide .. " "	.....	.....	.....	11
Brass .... " "	.....	.....	14	.....
Chrome ore..... " "	.....	‡242	.....	578
Copper, fine .. " "	142	722	20,374	2,124
" matte, ore " "	.....	.....	540	433
" ash ..... " "	.....	15	20	114
" sulphate " "	167	.....	10,199	.....
" other ... " "	.....	.....	.....	30
Cop-nickel matte " "	.....	153	.....	53
Ferro-mangan'se " "	.....	.....	.....	51
Iron ore ... " "	.....	.....	5	50
" pig, bar, rod " "	206	.....	2,729	585
" pipe..... " "	14	.....	13,685	.....
" plates, sheets " "	.....	.....	251	.....
" other..... " "	.....	.....	932	.....
Lead..... " "	320	.....	23,371	21,139
Manganese, ore. " "	.....	11,133	.....	3,266
Metals, old scrap " "	24	‡143	2,363	1,139
Composition.. " "	.....	.....	3,503	.....
Nails, ... " "	99	.....	8,019	.....
Nickel .. .. " "	.....	.....	812	35
" Ore ..... " "	.....	‡156	.....	4,001
§Railr'd material " "	.....	170	5,159	1,648
Rails, old..... " "	60	.....	9,151	.....
Spiegeleisen..... " "	.....	154	.....	266
Steel bars, plates " "	20	‡474	25,517	7,269
" rails..... " "	25	.....	27,963	155
" hoops..... " "	.....	.....	446	.....
" wire..... " "	646	.....	15,172	34
" not speci'd. " "	11	168	5,347	1,146
Tin .. .. " "	.....	50	.....	12,680
" dross or ashes " "	...	.....	60	.....
" and black plates " "	.....	‡1,115	.....	15,028
Zinc..... " "	.....	.....	265	198
" dross..... " "	.....	.....	500	.....
" ashes, skim " "	.....	.....	1,135	75
" ore..... " "	.....	.....	.....	.....
" oxide..... " "	.....	.....	1,810	229
†Baltimore.				
Alumina .... bags	.....	.....	.....	3,479
Antimony regulus...casks	.....	.....	.....	76
Chrome ore.....long tons	.....	.....	.....	.....
Copper, fine..... " "	856	.....	16,475	.....
" matte..... " "	.....	.....	.....	.....
" sulphate " "	.....	.....	1,251	.....
" pipe..... " "	.....	.....	100	.....
Ferro-manganese " "	.....	68	.....	1,525
Ferro silicon..... " "	.....	.....	184	.....
Iron pig, bar, etc. " "	.....	.....	783	3,258
" ore..... " "	.....	9,055	.....	46,596
" pipe..... " "	141	.....	1,769	.....
" pyrites..... " "	.....	.....	.....	21,316
" other ..... " "	.....	.....	637	15
Lead ..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	18,790
Metals, scrap.... " "	.....	.....	4,167	14
Nails ..... " "	.....	.....	319	.....
Spiegeleisen..... " "	.....	.....	.....	843
Steel, bars, pl'es.. " "	455	.....	19,431	55
" wire ..... " "	2	5	448	210
" rails..... " "	1,500	.....	23,891	.....
" pipe..... " "	.....	.....	573	.....
not specified.. " "	.....	.....	1,713	4
Tin ..... " "	.....	.....	.....	512
" dross ..... " "	.....	.....	.....	.....
" and blackplates " "	.....	68	.....	789
Zinc..... " "	.....	.....	18	.....
" dross ..... " "	.....	.....	152	.....
" skimmings.. " "	.....	.....	131	.....
" oxide..... " "	.....	.....	.....	1
***Philadelphia.**				
Antimony.. .....long tons	.....	.....	.....	5
Chrome ore..... " "	.....	1850	.....	1,170
Copper ore..... " "	.....	13,945	.....	21,184
" old..... " "	.....	‡11	.....	11
Ferro-manganese " "	.....	.....	.....	617
Iron, pig..... " "	.....	‡100	.....	250
" ore..... " "	.....	.....	.....	49,337
" old .. .. .. " "	.....	1732	.....	732
Manganese ore.. " "	.....	.....	.....	24,653
Spiegeleisen..... " "	.....	‡41	.....	1,075
Tin ..... " "	.....	.....	.....	525
" and black plates " "	.....	‡506	.....	758
Zinc dust ..... " "	.....	.....	.....	10
" ore..... " "	.....	.....	3,093	.....
***Galveston.**				
Lead ..... long tons	.....	.....	725	.....
Zinc ..... " "	.....	.....	1,900	.....
" ore ..... " "	.....	.....	118	.....
***Boston.**				
Tin..... long tons	.....	40	.....	465
***Newport News.**				
Copper ..... long tons	.....	.....	2,859	.....
***Norfolk, Va.**				
Copper, fine ..... long tons	.....	.....	1,182	.....
Iron, pig..... " "	.....	.....	18,094	.....
" pipe..... " "	.....	.....	410	.....
Steel, bars, billets " "	.....	.....	3,886	.....
" not specified " "	.....	.....	477	.....
***New Orleans, La.**				
Copper, fine ... long tons	.....	.....	1,370	.....
matte... " "	.....	.....	1,271	.....
Zinc ..... " "	.....	.....	2,057	.....
" ore..... " "	.....	.....	345	.....
***San Francisco, Cal.**				
Tin . long tons	.....	.....	.....	354

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending May 25th.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead ores; 2½c per lb. on pigs, bars etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2½ on sheets, etc. Copper, tin and platinum are free of duty.

trade balance is largely in our favor, seems remarkable, but there are reasons for it. One is found in the heavy purchases of securities made abroad when the speculative level here was much higher than in Europe. Another is that loaning rates are much higher in London and Berlin than in New York, and money can be placed to make a better return. Gold exports now need not excite any apprehension, since the movement can thus be explained by natural causes. Moreover, our stock of gold is now large, and the production of the mines continues on a great scale, adding considerably over $1,000,000 a week to the amount in the country.

The silver market has ruled very steady this week without special features, closing slightly weaker on withdrawal of Indian orders.

The statement of the United States Treasury on Thursday June 1st, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

	May 24.	June 1.	Changes.
Gold	$242,072,774	$227,874,534	D. $14,198,240
Silver	4,630,555	5,233,343	I. 602,788
Legal tenders	13,686,462	14,282,372	I. 595,910
Treas. notes, etc.	867,833	850,822	D. 17,011
Totals	261,257,624	$248,241,071	D. $13,016,553

Treasury deposits with national banks amounted to $82,136,734, a decrease of $5,316,875 during the week.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending May 27th, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$507,509,700	$589,727,400	$745,923,400
Deposits	575,600,000	696,006,400	889,705,100
Circulation	14,329,000	14,737,200	13,765,700
Reserve:			
Specie	88,979,200	173,862,000	206,876,500
Legal tenders	101,536,900	53,844,200	59,483,500
Total reserve	$190,516,100	$227,706,200	$266,360,000
Legal requirements	143,900,000	174,001,600	222,426,275
Balance, surplus	$46,616,100	$53,704,600	$43,933,725

Changes for the week this year were increases of $3,692,900 in specie, $2,454,100 in legal tenders, and $9,302,200 in surplus reserve; decreases of $17,578,800 in loans and discounts, $12,620,800 in deposits, and $35,600 in circulation.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	1898.		1899.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assn.	$173,862,000	.....	$206,876,500	.....
England	185,959,760	.....	148,587,355	.....
France	373,950,870	$245,419,940	367,619,475	$242,960,850
Germany	141,765,000	73,030,000	153,330,000	78,985,000
Aus.-Hun.	174,650,000	62,810,000	180,120,000	63,030,000
Spain	49,170,000	23,025,000	59,295,000	64,090,000
Neth'lnds	14,296,000	34,760,000	19,175,000	33,850,000
Italy	76,270,000	9,275,000	77,095,000	12,715,000
Russia	559,775,000	22,440,000	480,490,000	25,565,000

The returns for the Associated Banks of New York are of date May 27th, and the others are of date May 25th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the week ending May 18th, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

	1898.	1899.	Changes.
India	£2,696,840	£1,595,800	D. £1,101,040
China	285,166	498,046	I. 212,880
The Straits	96,462	24,907	D. 71,555
Totals	£3,078,468	£2,118,753	D. £959,715

Arrivals for the week, this year, were £141,000 in bar silver from New York, and £12,000 from Chile; total, £153,000. Shipments were £35,000 in bar silver to Bombay, and £17,500 to Calcutta; total, £52,500.

Indian exchange has declined very slightly, chiefly on account of renewed purchases of silver for Indian account. The Council bills offered were taken at an average of 15.97d. per rupee.

The receipts of the United States Treasury during May were $44,786,014 and the expenditures were $40,513,004, creating a surplus of $4,273,000. The pension expenditures for the month, as officially ascertained, were $12,129,048, the interest payments $4,312,470, the drafts of the War Department $10,344,134 and the Navy drafts $4,768,694. The total receipts from the ordinary sources since the beginning of the present fiscal year on July 1st, 1898, have been $469,089,030, and a deficit thus far in the fiscal year of $104,620,the expenditures have been $573,709,973, creating 143. The deficit for the same period of the previous fiscal year was $24,521,337. Both years included a part of the expenses of the Spanish war, but much the greater part of these expenses came within the current fiscal year.

The announcement was made on Thursday afternoon that the National City Bank of New York would ship $1,000,000 gold on the steamship "Lucania," sailing for Liverpool on Saturday. An officer of the institution when questioned as to the shipment said that it was an ordinary transaction made in the regular course of business.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. P'nce	Copper. Lake cts. ₽ lb.	Copper. Electrolytic. ₽ lb.	Copper. Lond'n standard £ ₽ ton.	Tin, cts ₽ lb.	Lead cts. ₽ lb.	Spelter, cts. ₽ lb.
27	4.87½	61	28⅛	18	17		25¾	4.40	6 70
29	4.87¾	61	28⅛	18	17	76 15 0	25¼	@4.45	6.70
30	....	....	28⅛	....	....	76 5 0	....	....	.....
31	4.88	61	28⅛	18	17	76 12 6	25⅞	4.42½	6.65
1	4.88	60⅝	28	18	17	76 0 0	25⅞	4.42½	6.60
2	4.88	60¾	27⅝	18	17	75 12 6	25⅞	4 42½	6.62½

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The copper market is very quiet. There is a somewhat better demand for export, but consumers here remain apathetic. There has been no marked pressure to sell, and it is expected that the requirements for export will again assume larger proportions. Prices here have changed but little and Lake is quoted at 18c., electrolytic in cakes, wirebars and ingots at 17c., cathodes 16¾c., and casting 16⅞c.

The London market, which closed last week at £77, opened at £76 15s., declined to £76 5s., reacted to £76 12s. 6d. and closes at £75 12s. 6d. for spot and £75 2s. 6d for three months. It is cabled us that the copper statistics have increased 3,000 tons. Refined and manufactured sorts we quote: English tough, £79@£79 10s.; best selected, £79 10s.@£80 10s.; strong sheets, £85 10s.; India sheets, £84; yellow metal, 7d.

Tin.—There has been a somewhat better inquiry for smallish lots, but no large transactions are reported. The market here is about 26c.

The London market, which closed at £117 12s. 6d., opened 10s. higher, at £118 2s. 6d., and has fluctuated within narrow limits, closing at £117 5s. for spot, £117 17s. 6d. for three months.

The supplies of tin in sight on June 1st are reported as follows, in long tons:

	In store.	Afloat.	Totals.
London	7,001	1,961	8,962
Holland	4,471	967	5,438
U. S., exc. Pacific ports	3,815	2,270	6,085
Total	15,287	5,198	20,485

The total shows an increase of 356 tons, as compared with May 1st, but a decrease of 4,349 tons as compared with June 1st, 1898.

Lead.—The market is quiet. Consumption is reported to be large, but buyers are covered for the present. The market is quoted as 4.40@4.45c. New York.

The London market is firmer and Spanish is quoted at £14 2s. 6d.@£14 3s. 9d. and English at £14 8s. 9d. There has been a fair business done at the slightly higher figures.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Since our last report the market has been very quiet, prices ranging from 4.30 to 4.32½c. for common and soft Missouri lead, and 4.32½ to 4.35c. for desilverized and corroding brands. Offerings have been light and the demand has been quite limited.

Spelter.—The market has given way somewhat more and is now quoted at 6.60c. New York and 6.45c. E. St. Louis. There are rumors that sales have been made at below these figures.

The London market is quoted £28 11s. 3d. for ordinary brands and £28 15s. for special brands.

Antimony is unchanged, the quotations still being 10½ for Cookson's, 10c. for Hallett's, "C," U. S. Star and Hungarian.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size and order.

Platinum.—Demand is active and prices continue high. For large lots $15.50 per ounce is now quoted in New York; for smaller orders, $16@$17. The London quotation is 62@64s. an ounce.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	35@37c.	Bismuth	$1.45@$1.50
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	38c up	Phosphorus	48@50c.
Alum.-bronze	20@23c.	Tungsten	70c.
Nickel-alum	33@39c.	Ferro tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

Quicksilver.—The New York quotation remains $42 per flask. The London price is unchanged at £8 2s. 6d. per flask, with the same figure quoted from second hands.

LATE NEWS.

The consolidation of the allied Carnegie companies appears to be progressing slowly. It is reported that the plans may not be executed before the latter part of June, and perhaps later. Henry Phipps, whose interests in the Carnegie properties are large, is now on his way to Europe to confer with Mr. Carnegie, and Henry C. Frick, who is the prime mover in the consolidation scheme, will probably go abroad for the same purpose next week.

According to a despatch from Aurora, Mo., dated June 1st, Colley & Company, of Boston, for $500,000, have purchased 80 acres of land, with 3 zinc mines thereon, belonging to S. H. Miner, of Aurora; A. H. Rogers, of Joplin, and Judge Leo Rassieur, of St. Louis, in addition to 458 acres of undeveloped land belonging to M. L. Flourney, of Aurora. This is one of the largest deals of the kind made in the Aurora District, which is 60 miles east of Joplin. The Tuttle mine included in this transaction is stated to be very large.

The armor-plate bids were opened at the Navy Department in Washington on May 31st, when it was found that the Carnegie and the Bethlehem companies declined to bid on Krupp armor at the limit fixed by Congress, but offered Harvey armor at $400 a ton. Burnstine Brothers, San Francisco, offered to deliver 24,000 tons to meet Krupp test at $450, delivery to begin in five years. The Navy Department has not yet outlined any policy to meet the situation. Several officials favor the use of Harvey armor on the four monitors and three battleships authorized last year, for which Congress provided $400 a ton for armor.

A despatch from Pittsburg, Pa., under date of May 26th, states that W. P. Snyder, with Jos. G. Butler, of Youngstown, and other parties, have formed the Shenango Furnace Company, and have purchased the old Douglas Furnace at Sharpsville, Pa., formerly operated by Pierce, Kelly & Company, but more recently operated under lease by Corrigan, McKinney & Company, of Cleveland, O. The furnace has been recently repaired and put in good condition, and will blow in about June 5th. The daily capacity will be about 225 tons of Bessemer pig. The Carnegie Steel Company, Limited, took possession of the furnace some time ago on a claim, and intended to operate it, but the former owners redeemed the furnace and sold it to Mr. Snyder and his associates.

The Susquehanna Iron and Steel Company is to have a capital of $3,000,000 in $10 shares. The company, when organized, will take over the properties of the Columbia Rolling Mill Company, at Columbia, Lancaster County, Pa., containing 73¾ acres, with rolling mill, with an annual capacity of 20,000 tons of finished grooved skelp and bar iron; the Vesta Furnace, at Watts' Station, Pa., with an annual capacity of 25,000 tons of pig iron; the property of the Columbia Iron Company, of Columbia, Pa., with rolling mill, with an annual capacity of 12,000 tons of bar iron; the property of the Susquehanna Iron Company, Columbia, Pa., with rolling mill, with an annual capacity of 10,000 tons of bar iron; the York Rolling Mills, of York, Pa., with an annual capacity of 10,000 tons of finished sheared skelp and plate iron; the Aurora Furnace, at Wrightsville, Pa., with an annual capacity of 25,000 tons of pig iron. The properties are stated in the prospectus to be among the most prosperous in Eastern Pennsylvania, and continuously during the last 10 years paid substantial dividends.

The report of the Dominion Coal Company, Limited, of Boston, for the year ending February 28th, 1899, shows the net income was $679,305, an increase of $138,452 over the previous year. Renewals and extensions were $52,527, against none the year before; interest on bonds, $176,100, a decrease of $3,180: sinking fund, $57,211, an increase of $2,531. Miscellaneous interest was $20,200, a decrease of $7,368: dividends were $160,000, as the year before. The surplus shown is $68,671, an increase of $28,902.

President H. M. Whitney, in his report, says: "With the exception of some additional equipment for railway, ordered but not yet delivered, all the expenditures necessary for mining and shipping the larger increased output have been made, payment having been made from the surplus earnings within the last two years without any increase in capital account. Since the close of the fiscal year, February 28th, $58,500 worth of bonds of the company have been retired through the sinking fund, leaving the bonded indebtedness $2,876,500. In addition to the increase in business expected from shipment to the United States during the coming year the Canadian business promises to be much larger than before."

MINING STOCKS.

Complete quotations will be found on pages 668, 669 and 670 of mining stocks listed and dealt in at:

Baltimore.	New York.	Mexico.
Boston.	Philadelphia.	Paris.
Butte.	St. Louis.	Rossland.
Cleveland.	Salt Lake.	Shanghai.
Colo. Springs.	San Francisco.	Toronto.
Denver.	London.	Valparaiso.
Spokane.		

New York. June 2.

The Exchanges were closed Monday and Tuesday, and during the remainder of the week business was very quiet.

Anaconda Copper was bid down to $54⅛ by speculators, and Amalgamated Copper fell from $101⅝ on Saturday last to $90 bid on May 31st, and sales were reported at $94. British Columbia Copper fluctuated between $10 and $11⅛ on the curb, Markeen Copper sold at $8½@$9½, and Tennessee Copper at $19@$23½, with little trading. Wahnita Copper of Arizona, capitalized at $1,000,000, divided into 100,000 shares of $10 each, was first called on the curb on May 25th, opening at $6¾@$7, receding a day later to $6¼@$6¾ and closing between $6¼@$6⅞.

American Smelting and Refining common touched $35⅛ on Saturday, and closed around $37. The preferred stock sold at $80@$82, a falling off from last week.

Homestake of South Dakota was bid for at $60 without finding sellers. The company has called a special meeting of stockholders on July 18th in San Francisco to ratify the proposed increase in capital stock from $12,500,000, divided into 125,000 shares, to $21,000,000, divided into 210,000 shares of $100 each. This increased capital of $8,500,000, represented by 85,000 shares, is to be employed as follows: For 37,500 shares the company will purchase all of the properties or the e tire capital stock of the Highland Mining Company (this company pays $20,000 a month in dividends); for 37,500 shares all of the properties or the entire capital stock of the Black Hills Canal and Water Company; for the remaining 10,000 shares the entire capital stock of the Black Hills & Fort Pierre Railroad Company. It is also proposed to increase the number of directors of the Homestake Mining Company from five to seven. For some years past these purchases have bee n contemplated with a view, we are told, of preventing a disintegration of interests in the Homestake Mining Company. This company pays now a regular and an extra dividend of 25c. each monthly, and has distributed $7,493,750. The Highland Mining Company, which is included in the purchase, has paid to date $3,884,718 in dividends.

There has been more inquiry for Ontario of Utah.

Some attention is being paid to the Missouri-Kansas zinc shares, and subscriptions are solicited for the Galena-Empire Zinc Company. This company has a capital stock of $3,200,000 divided into $800,000 in 8% cumulative preferred stock and $2,400,000 common stock; par value $25, full paid and non-assessable. The company is offering for subscription at par 2,000 shares of the preferred stock with a bonus of an equal number of shares of the common stock, and these subscriptions are being received by the North American Trust Company of New York. One-half of the amount subscribed must be sent in with subscription, and 50% will be called at the incorporation of the company. Of its lands 360 acres are stated to be developed having 99 shafts and 19 mills worki g with a capacity of 1,475 tons daily. Colley & Company, of Boston, are the promoters, and the land was examined by Frank Nicholson, of New York. The directors are: Gen. James S. Clarkson, New York, president; George T. Werts, New Jersey, vice-president; F. W. Ferguson, treasurer; Russell Whitcomb, secretary. Directors: Joseph B. Bartram, New York; James W. Hinkley, president United States Casualty Company; Charles W. Fuller, Jersey City; C. S. Hamlin, W. L. Trenholm, F. W. Ferguson, Henry Fisher, New York; Leslie C. Wead, Boston; Russell Whitcomb, New York.

In Knoxville, Tenn., application for a charter has been made by the Tennessee Coke, Coal and By-product Company, with a capitalization of $500,000. Among the incorporators are A. H. Gillingham, of Philadelphia; J. W. Keneval, of Chicago; A. F. Dreutzer, of Chicago; Gen. John Y. Wilder, and a number of local capitalists. The company controls the Keneval process for making coke and gas for the States of Tennessee and Alabama, and will introduce the process in coke ovens and iron manufactories in these two States on a royalty basis. A large block of coke ovens is to be built at once in Knoxville, and 100 at Harriman.

Boston. June 1.

(From Our Special Correspondent.)

The holiday on Tuesday broke into the week badly, but it seems to have given the market a needed rest. Monday might have been a holiday also, so little business was done.

On Wednesday Mr. Lawson broke out with a new two-column advertisement of advice, but no one seems to have paid any attention to it, and the market went all the other way.

In fact, there was a general decline, and the copper stocks were especially weak. The support recently given to Amalgamated appeared to be absolutely withdrawn, and its price broke easily to $97½, with $96 afterward bid and $97 asked. This had a baneful influence on the other copper stocks, and brought lower prices for some of them than had been recorded in many weeks. Calumet & Hecla was off 30 points from Saturday's closing, to $800. The selling at times was quite heavy, but some of the low prices of the early dealings were bettered late in the day.

Upon the whole it may be said that the market closes rather dull with a downward tendency. There is no special reason except the reaction which always can be expected on such a market as we have had for some months past. Just now many people seem puzzled; they do not know what to do, and this feeling helps the weakness of the market.

The industrial stocks were weak as well as the coppers, and this was shown quite prominently by Dominion Coal.

The gold stocks have been rather neglected. Nothing is doing in quicksilver shares.

The Wahnita Copper Company, finding that its Michigan property does not attract attention enough, has taken options on two properties in Arizona. They are described as near the Tonto River, north of Globe, and the lode is "believed to be" the same as that worked in the Clifton Mines. The accounts are rather glowing, considering the development. Two shafts have attained the great depths of 40 ft. and 15 ft. respectively! A statement which throws some doubt on the whole business is that there is great abundance of wood and water. If we are to believe all the prospectuses issued of late, it is wonderful how dry and treeless Arizona is suddenly developing into a heavily wooded and profusely watered region.

Your revelations about the Spenazuma and some other companies are attracting a good deal of attention here. Your work is appreciated, and the hope is expressed by many that you will keep it up. We might furnish you a list from Boston which need attention.

3 p. m.—The market was decidedly heavy at the opening, and there was pretty free selling, quite regardless of declining prices. This was especially the case with the copper stocks. It looks very much as if a good many people were tired of holding on—or unable to keep on—and were ready to drop out any way they could. Of course the drop will frighten others out. There was a sharp decline, as shown by the quotations which follow: Calumet & Hecla was off $20, at $770; Montana fell to $300, now $315; Tamarack, $187½, against $215 yesterday; Osceola off $5½, at $77½; Butte off $3½, at $74½; Franklin, $1¼, at $18; Old Dominion, $3½, at $35¾; Amalgamated off, to $87; Arcadian off $5, at $45; Isle Royale, $4½, at $43; Parrot, $2, at $55; Utah, $1½, at $37; Copper Range, $2, at $40; Cochiti, $1½, at $12; Centennial, $2½, at $30½; Zinc, $38; Santa Fe, $12¼; Old Colony, $11; Gold Dredging, $35; Mohawk off $2, at $26; Mass, $12; Ysabel, $12½; Winona, $14; Wolverine, $42¾; Rhode Island, $8½; Wyandotte, $7; Trimountain, $93¾; Adventure, $10; Allouez, $8; Arnold, $11¼; Atlantic, $30; Baltic, $28; Bingham, $11; Bonanza, $4.

Salt Lake City, May 27.

(From Our Special Correspondent.)

Utah mining shares, like the weather, fluctuated badly, and the week ends with prices demoralized. A few of the best dividend payers were not affected, while among the speculatives, Chloride Point is a marked exception, showing gain and closing firmer. On the whole the bears are having things much their own way.

Eagle & Blue Bell dropped with a rush, closing at $1.10, without apparent cause. Four Aces was sport for the bears, with sales around 20c. Grand Central holds at $8. Homestake is off a few points

Plan of joining Richmond-Anaconda with Humbug and Uncle Sam in one company appears nearing consummation. Star Consolidated continues in demand around 90c. Swansea and South Swansea are off a few points. Geyser-Marion lost heavily, following the announced changes in the directorate. Ingot is stationary, with inside buying at 29c. Mercur is firm at $7.30 bid. Sacramento pays the $5,000 dividend June 1st. There are inquiries for Alice, but few shares on this market. Dalton & Lark holds well at 10c. Galena is soft around 20c. Utah is in demand at $1. Seekers for mining properties abound in Salt Lake City and numerous options are being taken, which mean transfers provided examinations are satisfactory. The freedom from labor troubles places Utah a favorite among investors and contrasts are frequently drawn with conditions in Idaho. A larger percentage of Utah mine workers own their homes than in any other State, and they are contented and well to do.

San Francisco. May 26.

(From Our Special Correspondent.)

Very little change in the market is to be noted, the dealings being small, and the changes in price unimportant. An effort has been made to excite public interest by circulating reports that Mr. Mackay was preparing to take hold of some of the Comstock companies again; but it has fallen quite flat, since no one seems to put any faith in these reports.

Some quotations noted are: Consolidated California & Virginia, $1.70@$1.75; Ophir, $1.10@$1.15; Sierra Nevada, 76c.; Best & Belcher, 52c.; Mexican, 47c.; Yellow Jacket, 39c.; Potosi, 38c.; Hale & Norcross, 34c.

Plans are being prepared for a water-power plant to utilize the new flow of water from the Sutro Tunnel. It is believed that this will be sufficient to run a mill of considerable size.

The Old Home Consolidated Mining Company, of Nevada County, Cal., has levied an assessment of 1c. a share, delinquent June 24th.

London. May 20.

(From Our Special Correspondent.)

A new copper company just brought out is the Einasleigh Freehold Copper Mines, Limited, which has been formed with a capital of £200,000 to acquire the Einasleigh property, in the county of Gilbert, North Queensland. This property has been introduced by Mr. W. H. Woodhead, who is the managing director in Broken Hill, of the British Broken Hill Proprietary Company, and the company is being floated by his friends in this country. The properties have been reported on by Mr. Reginald Murray, of London, and Mr. R. L. Jack, of Queensland. A good deal of preliminary work has been done, enough to show the presence of promising ore bodies, so investors appear likely to have a fair run for their money.

Paris. May 20th.

(From Our Special Correspondent.)

The stock market remains very active, with large dealings in nearly all classes of shares. The metallurgical stocks have, however, received a reaction, since it is pointed out that the heavy rise in prices of coal and coke must affect their profits for the current year. As to coke, it is difficult at present to get sufficient supplies at any price.

The chief excitement is in the copper stocks, which are in great demand, at prices which continue to rise. The justification for this is the high price of the metals, and the promise that quotations will continue at or near the present level for some time. The outcome of the much discussed copper trust in America is considered here of little importance, as it does not include many of the important mines.

The coal and iron shares are strong, especially in the Russian group. A new stock in this group is that of Societe de Materiel de Chemins de Fer du Haut Volga, which was organized in 1898. The works of the company were completed and put in operation in January last; they are situated at Tver. The company has orders amounting to about 8,000,000 fr. to execute.

The foreign trade of France for the four months ending April 30th is given by the Ministry of Commerce as follows:

	1898. Francs.	1899. Francs.
Imports	1,508 175,000	1,448,275,000
Exports	1,121,580,000	1 178,210,000
Excess. imports	386,595,000	270,065,000

The imports showed a decrease of 59,900,000 fr., chiefly in food; the exports increased 56,630,000 fr., chiefly in manufactures.

To the variety of coins now circulating in France has been added Swiss gold pieces of 20 fr. For a long period of years no gold has been coined in Switzerland, as that country was satisfied with the gold of the other countires of the Latin Union. The present issue is said to have been an expensive experiment, as at the price of gold each 20-fr. piece entailed a loss of 10 centimes. As the exchange is against Switzerland, the greater part of the coin has already drained into France, but the pieces are disappearing into private collections. The coin is one of the most artistic in Europe. The head, symbolizing on the obverse side the republic, with a diadem, is singularly beautiful; the reverse bears the Geneva Cross.

The advocates of a more aggressive colonial policy are becoming very active, and are pushing forward their views on every opportunity. The exploitation of the resources of Madagascar and the building of the Trans-Saharan Railroad to utilize our somewhat shadowy possessions in Central Africa are their favorite topics just now. As to Madagascar, there seems to be some doubt about what ought to be done. French colonists and capital are needed; but how to get them is the question. Our people do not want to go abroad and cannot be persuaded to try their fortunes in the great island, however tempting its resources may be. As to capital, they are much readier to invest in Russia or Spain than in our own possessions. Oratory will not make the Frenchman a colonist, and it is to be noted that the advocates of the colonial policy do not go themselves. As to the Trans-Saharan Railroad, it is quite likely that at least a beginning will be made before long, and studies of the best route are now being made. Azote.

STOCK QUOTATIONS

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	May 26. H.	May 26. L.	May 27. H.	May 27. L.	May 29 H.	May 29 L.	May 30 H.	May 30 L.	May 31. H.	May 31. L.	June 1. H.	June 1. L.	Sales.
Adams Con.	Colo.	$10	.15		.12										
Ammo.	"	1	.06		06										
Alice	Mont.	1	.95		98	.95					.95	.90			
Alliance	Colo.	1	.10										.15	.10	200
Anaconda, c	Mont.	25	58.75	57.50	58 75	57.50					57.00	54.13			7,900
Anaconda Gold	Colo.	5	.52		.50						.51				900
AnchorialLel	"	1	.97½		.98						.95		.95		200
Argentum-Jun.	"	2	.20		.24						.25				
Belcher	Nev.	3	.31	.28	.32	.28					.30	.28			
Best & Belcher	"	3	.47		.47						.47	.45			
Breece	Colo.	25	1 6	1 25	1.60	1.25					1.60	1.25			
Brunswick	Cal.	1	.22		.24	.20					.25	.20			
Bullion	Nev.	1													
Choilar	Nev.	3	.28	.27	.30	.22					.28	.25			
Chrysolite	Colo.	50	.11		.1						.11	.10			
Comst'k T. b'ds	Nev.	100													
do. stock	"	100	.15		.05						.06				1,000
do. scrip	"	100	.07		.07						.06				
Con. Cal. & Va.	Colo.	2½	2.60	1.65	1 85						1.85	1.55			100
Con Imperial	"	1													
Cr & Cr. Creek	"	1	.09		.08						.09				
Crescent	"	10	.15		.15						.16				
Cripple Cr. Con.	"	1	.12	.11	.10						.10				2,100
Crown Point	Nev.	3	.27		.25						.27				
Deadw'd Terra.	S.Dak	25	.55	.45	.55	.45					.70	.48			
Elkton	Colo.	1			.90						.91				300
El Paso	"	1													
Enterprise	"	1	.28		.28						.28				
Father de Smet	Dak.	100	.12		.12						.14				
Findley	Colo	1													
Garf Con.	"	1	.12½		.13							.14	.12½		1,100
Gold Coin C.Clk	"	1			1.92						1.95				
Gold Coin Gilp.	"	5			.38						.35				
Golden Fleece	"	1	.33½		.30						.33½		.35	.31	100
Gould & Curry	Nev.	3	.2-	.27	.2						.2				
Gregory Gold	Colo	1	.02½	.02	.02½						.02½		.02½	.02¼	53,500
Hale & Norcross	Nev	3	.19		.30	.26					.35		.25		300
High Five	Colo.	1	.22½												450
Homestake	S.Dak	100	60 00		60.00						60 00				
Horn Silver	Utah.	25	1 55	1.50	1.55	1 50					1 5	1.50			
Iron Silver	Colo.	20	.55	.50	.56	.50					.55	.50			
Isabella	"	1	.78		.77						.75		.80		
Jefferson	"	1	.06		.04½								.06		
Jennie Blanche	"	1	4.5¾	4½	5	.5					5.1½				3,600
Justine	"	1	02½		.02¾						02½		.03¾	.02½	
King & Pemb.	Ont.	10	20	.15	.35	.20					20				1,200
Leadville Con.	Colo.	10	10	.09	.10	.09					10	.09			
Little Chief	"	50	.20	.8	.20	.18					20	18			
Mexican	Nev.	3	45	43	4	44					.50				200
Mollie Gibson	Colo	5	26		.25								.30	.27	400
Moon Anchor	"	1													
Mt. Rosa	"	1	.21		2								26½	.23	200
Occidental	Nev.	3	.30		.25										
Ontario	Utah.	13	7 50		7.50						8.0				
Ophir	Nev.	3	1.0	1 15	1.05	.90					1.10	.90			110
Pharmacist	Colo	1	.05		.06						.05				600
Phenix	Aris.	1	10	.09	.10	.09					1	.09			
Plymouth Con.	Cal.	10	10	.09	.10	.09					.09				
Portland	Colo.	1	1 95		1.90						1 90				
Potosi	Nev.	3	.37	.34	.37	.24					.35				200
Quicksilver	Cal.	100	2 00		2.00						2.00				
do. pref	"	100	7 50		7.50						7 50				
Rocky Mtn.	Colo	1			.03¾										
Savage	Nev.	2½	.24	.21	.27						.24				1,000
Sierra Nevada	"	3	.82	.80	.72	.70					.70				500
Small Hopes	Colo.	20	1.30		1.25						1.35				
Specimen	"		.06		.06										
Standard Con.	Cal.	100	2 50		2. 0						2.50	2.40			
Syndicate	"	100	.08												100
Union	Colo.	1	.22	.21	.20						.22		.23	.22	100
Union Con.	Nev.	2½	.40		.40						.40				
Union Gold	Colo.	1													
Utah Con.	"	3	.15		.19	.18					.15				1,000
Vindicator	Colo	1													
Work	"	1	.27		.30	.28					.29		.26	.25	3,500
Yellow Jacket	Nev.	3	.35		.35						.35				

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	40	38¾	32	38¾					38	30½	36		5,712
" " " pf		100	84	82	8.½	82					82	80	81½		7,940
" " " obs		100													
Am.S &W Co n		100	61½	59½	62	59¼					61¾	58	59¼		39,84
" pf'r n		100	95½	93¾	96	95¼					95	91	95		8,900
Central of N. J.	N. J.	100	114		116	114					116½	114½	1 4		8,0 0
ol. Fuel & L.	Colo.	100	46	41½	43¼	44¾					44¾	41½	41½		3,070
Col. & H.C.&I.	Ohio.	100	15¼	14½	15	14½					14½	14	13		60
Del. & Hud	N. Y.	100	1 9	118	119¾	118¼					117¾	16	116½		2 262
Federal Steel.		100	58¾	58	58¾	57¾					59¼	54¼	55		79 270
" pf		100	89¾	89¼	89¾	89¾					81	78¾	79¼		19,895
National Lead.	N. Y.	100	30	29½	29½						30	28	28		3,180
" " pf	Md.	100			111						111				575
National Sa't		100	50¾	49	49¼						50				
" pf		100			74	76	73				75	70			
New Central C.			39	37	39						39	37			
N. Y., Ont. & W.	N. Y.	100	25¾	24½	26¼	25					25¾	24¾	24¼		14,580
Phila. & Read	Pa.	100	21		20½						2 ¼	20¾	19½		1,460
" " 1st pf.	"	100	56¼	55¼	58¼	56¾					58¾	56¼	56½		26,760
Standard Oil		100	469	467	468	461					465	458			
Penn.C.,L.&R.R.	Ala.	100	58¾	57½	58¾	57½					59	56¼	58¾		37,060
" " pf	"	100													

*Ex-Dividend ‡ Holiday.

PHILADELPHIA PA.

NAME OF COMPANY	L'cation.	Par Val.	May 25. H.	May 25. L.	May 26. H.	May 26. L.	May 27. H.	May 27. L.	May 29. H.	May 29. L.	*May 30 H.	May 30 L.	May 31. H.	May 31. L.	Sales
Bethlehem I.	Pa.	$50	105												2
Cambria Iron.	"	50	44.75	44 63	44.75		44.75						45.00		418
*CambriaSteel	"	50	20 50	19.75	20.13	19 63	20 13	19.75					20 00	19.38	7,705
Cloctaw. Pref.	I. T.	50	45.0		45 00								45.25	44.50	770
Choc. Tr. ctf.	"	50	35. 0		34.0								34.00		116
Lehigh Val	Pa.	50	24 50	23 75	24 50		25.50						25.00	23.75	1,288
Penna. C. R.	"	50	64.0	63.50	63.88		63 88	63.75					64 00	63 13	2,612
Penna. Steel.	"	100					78.00						76.50		100
" pr'f	"	100													
United Gas I.	"	50	159½	158	160		159½	160					159½	157½	1,336
Welsb. of Can	Can	100	2.75	2 50	2 50										545
Welsb. Coml	"	100													
" pf	"	100	68.50		68.50										25
Welsb Light.	"	100	50.00		52.00	51.0									20

Total shares sold, 15,387. * Holiday

BALTIMORE, MD.‡

June 1.

NAME OF COMPANY.	Location.	Par value	Bid.	Ask	NAME OF COMPANY.	Location.	Par value.	Bid.	Ask
Atlantic Coal	Md.	$10			Howard C.&C	Md.	$5		
Big Vein Coal	"	10			Newburg Orrel C.	"	25		
Consolidation Coal	"	100	55	57	Silver Valley	N. C.	5		
George's Creek Coal.	"	100		117½					

ST. LOUIS, MO.

May 31.

NAME OF COMPANY.	Location.	Par value.	Latest Bid.	Latest Ask.	Sales.	NAME OF COMPANY.	Location.	Par value.	Latest Bid.	Latest Ask	Sales.
Am. Gold.	Colo.	$10				Granite B.	Mont.	$10	$3 00	$3 15	2,300
Am Nettie	Colo.	10	1 65	$1 90		Hope St. L.	Mont.	10	1.27½		
Central L	Mo.	100	93.00			St. Joe. L.	Mo.	10	14.75	15.50	
Doe Run L.	Mo.	100				Sm. Hopes.	Colo.	20	1.30	1.35	

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	May 25. H.	May 25. L.	May 26. H.	May 26. L.	May 27. H.	May 27. L.	May 29. H.	May 29. L.	May 30. H.	May 30. L.	May 31. H.	May 31. L.	Sales
Aetna, cons. g.	$5	100,000						5.00							15
Adven'u'e,Cons	25	100,000	11.75	11 50	11.00	10 00							10.50		305
Allouez, c	25	90,000	9.50	9 25									9.00		310
Am. Z., L. & S.	25	60,000	40 50	37.50	40.00	39 50	39 50								4,021
Anaconda	25	1,200,000	59 00				57.75						57.63	54.13	825
Arcadian, c	25	100,000	57 00	53 50	57 00	53.00	56 00	53 50					54 00	50.00	4,192
Arnold, c	25	60,000	12.00	11.50	11.88	11 00	11 50	11.00					11.50	11.00	2,415
Ashbed, c	25	40,000													
Atlantic, c	25	40,000	32.00	31.00	31 00								30.00		285
Baltic, c	25	100,000	31 00	30.00	30.00	29 50	30.00	29 88					30 00	49 00	995
Bingham, c.&g.	10	190,000	13.00	12 00	12.00		12.00	11.75					12 00		725
Bonanza, g.	10	300,000	3 88		3.88		3 88	3 75					4.00	3 75	3,655
Bost. & C. Cg.	2	400,000													
Bos.&Mon,Tr R	25	200,000	365	360	361	351							360	340	345
Breece	25	150,000													
BritishCol. Ltd	5	200,000			13 00								13.75		160
Butte & Bost., c	10	200,000	88 50		87 0	82 00	87 00	83.00					84 50	80 00	2,778
Cal. & Hecla, c.	25	200,000	895		932½	830	830						4910	790	121
Catalpa, s	10	100,000													
Centennial, c.	25	300,000	40.00	38 00	37 50	35 50	37 00	36 50					36.00	34 50	5 0?6
Cochiti, g	10	90,000	14 00	12 75	14 0	13 00	13.50	12 88					13 00	12 00	1,905
Copper Ranges.	10	150,000	45 00	45.00	45 00	44 00	44 00	43 50					45 00	43 75	1,891
Crescent, s.	10	800,000													
Dominion Coal	100	800,000	54 50	54.00	54 50	53 50	53.00	51 00					53.25	50 50	8,870
do. pref.	100	150,000			129	118½									32
Federal Steel.	100	80,000	59 75	58 00	58.88	58 25	58 75	57 5					58.00	54 25	7,816
do. pref	100	464,843	81 0	80 (0	81 0	80.00	80 25	80 13					80 75	79.25	2,819
Franklin, c	25	527,676	20 50	2 .00	20.50	20.25	20.50						20 25	19.50	2,596
Gold Co n g	1	200,000											1 00	75	125
Humboldt, c.	25	40,000			2 50	2 25							2.50	2.00	230
I. Royal Con. c.	25	100,000	55 00		54 00	52 00	52 00						51 00	48.00	1,150
Mass., con	25	100,000	13.25	13 00	13 50	12 50							13.50		340
Merced, g	10	100,000			11 00	10.00	10 38						10.00		340
Mohawk, c	25	100,000	30.25	29 75	29 00		29 00	28 00					29.00	28 00	888
New Idria, q.	5	100,000											12 00		102
N.A.Gold Dre'g	10	100,000			37 00	35 00							36.50	34.50	1,050
Old Colony, c	25	100,000			13 00	12 00							12.50		50
Old Dominion,c	25	150,000	42 00	41 50	41 25	40 00	41 00	40.50					41.25	39 00	4,810
Osceola	25	93,000	86.0	85 00	85.50	82 00	83 00						85 00	83 50	1,408
Parrot, s & c	10	230,000	*6250		60.5	57 50	60 00	58 00					60.00	57 25	3,280
Pioneer, g	10	100,000													
Quincy, c	25	100,000	160		165	160	160						162	155	323
Rhode Island	25	100,000	10 75	10 25	10 00		9 00						10.00	9 50	245
Santa Fe, g. & c	10	200,000	14 00	13 50	13 75	13.75	13 0	12 75					14.50	12 00	5,432
San. Ysabel, g.	5	130,000	14 50		14 5	14 00	14 00						13.50	13 00	735
Tamarack, c	25	60,000	228	225	225	220	220						2216		93
Tecumseh, c	25	40,000	6.50	6.25			6.38	6.25					6.50		155
TrimountainMg	25	100,000	10 00		10 00		10 00						10.00		945
U C L & Mg. Co	25	80,000			8 50								8.13	8.00	50
United States	25	250,000	24 50	24.00	24 25	23 25	24 00	23 0					23 25	22 00	10,190
Utah Cons g &c	5	3 0 0	48 00	42 0	43 0	41 50	41 50						43 00	39 50	3,252
Victcr, g.	5	200,000			3.50								3 50		250
Washington	25	40,000	2 13										2 00		55
White Knob	100	58,000													
Winona, c	25	100,00	16.00	15 00	14 5		14 25						14 25		315
Wolverine, c	25	60,000	45.00	44 00	45 00	43 75	44.50	43.00					44 13	44 00	1,32
Wyandotte	25	100,000			7 75	7 50	6 50	6 25					7.50	7 00	80

†Official quotations Boston Stock Exchange. Total sales, 91,273 * Ex-Dividend ‡ Holiday

CLEVELAND, O.

June 1.

NAME OF Co.	Iron Range	Par Val.	May 25 Bid.	May 25 Ask.	NAME OF Co.	Iron Range.	Par Val.	May 25. Bid	Ask
Aurora	Gogebic	$25	$15	$4	Jackson	Marquette	$25		
Champion	"	25	15	25	Lake Superior	"	25	$40	$45
Chandler	Vermillion	25	59	60	Minnesota	Verm. & Mes	100	91	92
Cleve'd-Cifs.	Marquette	100	85	90	Pitts & L'keAng	Marquette	25	1.5	125
Fed. Steel Co.		100	29½	30	Republic	"	25	15¾	16

BUTTE, MONT.*

April 30.

NAME.	Location.	Par Val	Quotati'ns. Bid.	Quotati'ns. Ask.	Sales.	NAME.	Location.	Par Val	Quotati'ns. Bid.	Quotati'ns. Ask	Sales
Alice	Mont.	$25	$0.60	$0.90		Lone Pine C., g	Wash	$1		$ 34	
Am. Dev. & M.	"	5	.05	.25		Mont. Ore P.	Mont.	25		150.00	
Anaconda, g.	"	2		66 00		Morn. Glory, g	Wash	0.10		.15	
Hone (Basin).	Wash			2 0		Mountain L	"	0.10		1.20	
Black Tail, g.	Mont			.11		New South Cr's	Mont		$0.05		
Con. Gran.-Bim.	Idaho		3 0	5 00		Number Six, g.	Wash	0.10		.16	
Con. Tiger-Poor.	Mont.	1	30	.40		Rebate, g.	"	1		.20	
Gold Mn. (Ruby)	"			.30		Republic G.	"	1		1.20	
Iron Mn., g.			.05	.15		San Poil, g.	"	1		.14	
Jim Blaine, g	Wash			.43		Tom Tcumb, g	"	1		.26	

* Specially reported by the Hewett-Stanley Company.

COLORADO SPRINGS COLO.‡

NAME OF COMPANY.	Par val	May 22. H.	May 22. L.	May 23. H.	May 23. L.	May 24 H.	May 24 L.	May 25 H.	May 25 L.	May 26 H.	May 26 L.	May 27. H.	May 27. L.	Sales
Alamo	$1	08		07¾		08		08						7,000
Anaconda	1	.53¾		.54	.53½	.51				.53	.52			6,100
Arg'ntum J	1							.33½		.29½				2,000
C. C. Con.	1			.09¾	10	10¾	10¾	10	10¾	.10	10¾			24,500
Currency.	1	.05¾		.05¾	.06	.06				.06¾				8,000
Dante	1	.11		.26¾	27½	11¾								10,5.0
ElktonCon	1					.87½	.88½	.88		.88½	.90			5,700
El Paso G.	1	.24½	26¾			.28	.28¾			.30	.31½			38,919
Favorite	1	.04¾		.04½	.04¾									6,000
Findley	1	14¾		14¾		13¾	14¾	.14¾	.14½	.13¾	.14			13,400
Golden Fl.	1									.35				100
Hayden G	1	0 ¾	.01¾	.01¾		.01¾				.01¾				20,000
Ing. Con.	1			.18				.08						100
Isabella	1	.86¾	85	8.¼	84	.80¾	82¾	82½	83	.77	.80			65,800
Jack Pot	1			.43¾		.43¾	.42¾	.43		.43¾	.43			22,100
Lexington	1	12¾	13¼	12¾	13	12¾	12¾	12¾		12¾	12½			98,000
Ma'net R.	1	.04¾		.04¾	.04¾			.04¾		.04½	.05			29,000
Marion	1	.005½												5,000
Maton	1	35¾		.35		33	33¾	.33		32¼	.33			31,200
Midway	1	07¾	.05¾	.07¾	.07¾	07¾	.07¾	.07¾	.07¾	.07¾	.07¾			172,000
Mobile	1	.07¾	.07¾	07¾	.07¾	.08¾	.08¾	.07¾	.08	.07¾	.08¾			95,000
Montrose	1					07¾								
Moon-A'c'r	1	1 03		1 03				1 03						1,500
Mt. Rosa	1	1.99¾												
New Haven	1	02½	02¾	02¾	02¾	02¾		02¾		.03	03¼			76,000
Oriole	1	.04¾	05	.04¾		05	.05¼	.04¾		.05¼	.05¾			75,500
Pilgrim C.	1	.06¾		.06¾				06¾		.06¾				4,000
Pinnacle	1	.14	15¾	14¾	.15¾	14¾	14¾			14¾	.14¾			106,500
Portland	1			1.99¾	2 00	1 99½		1.98¾	1.99	1.97	1 98			5,900
Prince Alb.	1	.04¾		.04¾		.04		04	.04¾	04				9,000
Princess	1	05												5,000
Pythias	1			04¾						04¾				3,000
Specimen	1					08¾	.08¾			08¾				4,000
Tornado	1									.27				1,000
Trachyte	1					04¾				.04¾				5,500
Union	1	.22		.22¼	23¾	.23		.23¼	.23	.22	.22½			14,800
Uncle Sam	1	04¾		.04¾	.05	.04¾	05			.05				35,000
Vindicator	1	95¾												2,100
Work	1	20¾	.21	21¾	23¼	.25½	28	23¾	.25½	26	.28¼			324,800

‡ Official quotations Colo. Springs Mining Stock Exchange. Sales: Listed stocks, 1,3.3,995 shares; unlisted, 1,363,282 shares; total, 2,667 277 shares; cash value, $355,121 99.

By Telegraph.

NAME OF COMPANY.	Par Val	No. of Shares.	May 27. B.	May 27. A.	May 29. B.	May 29. A.	* May 30. B.	May 30. A.	May 31 B.	May 31 A.
Anchoria-Leland	$1	600,000	.95	.97					.95	.97
Elkton Con	1	1,250,000	.91¾	.92½					.96	.97
Gold Coin, Vict.	1	1,000,000	1.98	2.00					1.98	2.00
Golden Fleece	1	600,000	.33	.35					.33	.35
Isabella	1	2,250,000	.76¾	.77					.80¾	.81
Moon-Anchor	1	600,000	1.05	1.08					1.05	1 08
Mt. Rosa	1	1,000,000	.24	.25					.25½	.26
Portland	1	3,000,000	1.96	1.98					1.97	1.98
Work	1	1,250,000	.27¼	.27½					.25¾	.25½

* Holiday.

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	May 22. B.	May 22. A.	May 23. B.	May 23. A.	May 24. B.	May 24. A.	May 25. B.	May 25. A.	May 26. B.	May 26. A.	May 27. B.	May 27. A.	Sales.
Mines:														
Anac'da G.	$5	.32½	.55	.82½	.54	.53½	.54½	.52	.53½	.51	.53	.51	.53	1,400
Arg. J.	1	30½	.31¼	.30	.32	.....	.....	30	.....	.29½	.....	.29	.....	2,000
Bankers	1	.08¾	.....	.....	.....	.09	.....	.....	.....	.....	.....	.09	.....	1,000
CrippleC.C.	1	.....	.....	.....	.....	.....	.....	.....	10	.01½	.....	.09¾	.10	.....
Delia S	1	.04	.....	.01	.....	.....	.....	.04¾	.....	.04¼	.....	.04¾	.....	.....
Elkton Con.	1	.88¾	.89¾	89	89½	.88½	.90	87½	.89	.88½	.89	.92	.93¾	.....
El Paso	1	.25	.....	25	.....	.....	.....	7	.....	.28½	.34	.29½	.34	.....
Enterprise	1	.07	.....	.07¾	.....	.07¾	.....	.07½	.....	.....	.....	.08¼	.07	.....
Fanny R.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.41	.45	.....	.....
Findley	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Garf. Con.	1	.13	.15	.....	.....	.....	.....	.....	.....	.....	.....	.12	.13½	.....
Gold Coin.	1	2.00	.....	.....	.....	.....	.....	1.99½	.....	1.98	.....	1.98	1.98½	.....
Gold Fleece	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Eagle.	1	.41	.50	.....	.....	.35	.50	.40	.50	.....	.....	.....	.....	.....
Independ'nc	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Clad.	1	.03½	.....	.04¾	.04¾	.04½	.04¾	.04	.04¾	.04¾	.....	.04¾	.04½	.....
Isabella	1	.85	.....	.83	.85	.82½	.86	.83½	.....	.77½	.....	.77½	.78	200
Jack Pot	1	.42	.....	.....	.....	.....	.....	.41	.....	.41½	.....	.....	.....	.....
Jefferson.	1	.....	.....	.....	.....	.....	.....	.06½	.07	.06¾	.....	.....	.....	.....
Keystone	1	.....	.....	.11¾	.11½	.10¾	.....	.....	.....	.....	.....	.....	.....	5,000
LosAngeles	1	.....	.....	.10	.....	10	.....	.09¾	.11	10	.....	.....	.10¾	.....
Mollie Gib.	5	.....	.90	.....	.80	.....	.....	.....	.80	.....	.....	.....	.80	.....
NewZealand	1	.32	.39	.32½	.36	.33½	.34¾	.31	.33	.32	.34¾	.32¾	.....	2,100
Ophir	1	.33¾	.35	.33¾	.....	.33¾	.....	.32½	.33¾	.32	.34¾	.31¾	.34¾	.....
Pharmacist	5	.....	.....	.....	.....	.....	.....	.06	.....	.....	.....	.05	.06½	.....
Portland	1	1.99½	2.00	1.99¾	2.00	1.98½	1.99	1.98	1.99	1.95	.....	1.97½	1.98½	.....
Pr. Albert	1	.04	.04¾	.04	.04¾	.04	.04¾	.04	.04¾	.04¼	.04¾	.04	.04¾	17 000
Specimen	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Gold	1	.21¾	.22½	.....	.....	.21	.....	.2 1-8	.23	.....	.....	.....	.....	.....
Va. M.	1	.....	.....	.04	.04½	.03¾	.04¾	.....	.04½	.....	.04¼	.04¼	.04½	.....
Work	1	.....	.....	.22	.24	.25	.25½	.25	.27	.27¾	.28	.27	.28¾	5,100
Prosp'cts:														
Ben Hur	1	.06¾	.....	.06¾	.....	.06	.07	.07½	.....	.06¾	.06	.06¾	.6¾	7,000
C.C.Imper'l	1	.02¾	.003	.02	.003	.002¾	0 3¼	.002¾	003	.002½	.003	.002¾	.033	20 000
Reno	1	.....	.....	.....	.....	.02¾	.03½	.....	.....	.....	.....	.....	.....	.....
Tamarack	1	.06	.....	.07	.....	.06	.....	.07	.012¾	.07½	.....	.07¾	.....	.....
Miscell.‡														
Acacia	1	.08¾	.09¼	.08¾	.09½	.08¾	.....	.....	.....	.08¼	.07½	.08¾	.09¼	.....
Alamo	1	0.7¾	.08	.07¾	.08	.....	.08½	.....	.05¾	.07¾	.08	.07¾	.08	.....
Buckhorn	1	.03¾	.04	.03¾	.04	.03¾	.04	.03¾	.04	.03¾	.04	.03½	.04½	.....
C. C. & M.	1	.09	.....	.09½	.10½	.09¾	.10¼	.09½	10	.09¾	.10¾	.09¾	.0¾	8,000
Franklin	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Goldstone	1	.012¾	.015	.01¼	.01¾	.013	.013¾	.01¾	.0 9¾	.012¾	.013½	.013¾	.015	3,000
Mobile	1	.07	.0½	.07½	.....	.07½	08	.07½	08¼	.07	.08½	.....	.07½	.....
MountainB.	1	.....	.....	.04¾	.05	.04¾	.....	.05¾	.05¾	.05¼	.05½	.05¾	.05¾	7 5 0
Omega	1	.....	.02¾	.02½	.02¾	.02	.02¼	.04	.02¾	.02	.02¾	.04	.02¾	14,000
Pinnacle	1	.13½	.15	.14	.15¾	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trachyte	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

‡ Official Quotations Denver Stock Exchange. Sales: Mines, 33,80‡ shares; Prospects, including those mentioned, 27,000 shares; Miscellaneous, 30,5.0 shares; total, 91,300 shares.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par. value.	May 25.	May 26.	May 27.	May 29.	May 30.	May 31.
Alpha Con.	Nev.	1.00	.....	.....	.....	.....	.....	.....
Alta	"	2 00	.06	.06	.06	.05	.....	.05
Andes	"	3 00	.0s	.08	.09	.08	.....	.08
Belcher	"	3 00	.35	34	.34	.32	.....	.32
Best & Belcher	"	3 00	33	.32	.34	.48	.....	.51
Bullion	"	1.00	.06	.05	.06	.05	.....	.05
Caledonia	"	3.00	.54	.57	.57	.58	.....	.59
Challenge Con	"	3.00	.34	.35	.34	.32	.....	.33
Chollar	"	3.00	.31	33	32	.30	.....	.31
Confidence	"	3.00	1 00	1 10	1 00	.95	.....	.....
Con. California & Virginia	"	2 50	1 70	1 70	1.75	1.65	.....	1.65
Cons. Imperial	"	1.00	.01	01	.....	.....	.....	.....
Cons. New York	"	1.00	.....	.....	.....	.....	.....	.....
Crown Point	"	3 00	.30	.29	.28	.26	.....	.27
Exchequer	"	1.00	.02	01	.01	.02	.....	.02
Gould & Curry	"	3 00	.31	31	31	.29	.....	.29
Hale & Norcross	"	3 00	.34	.35	.35	.35	.....	.35
Julia Con	"	1.00	.02	02	.01	.02	.....	.02
Justice	"	2.00	19	.19	.19	.18	.....	.17
Kentuck Con	"	1 00	.....	.....	.....	.....	.....	.....
Mexican	"	3.00	47	48	.48	.43	.....	.44
Occidental Con	"	3 00	30	30	.30	30	.....	.30
Ophir	"	3 00	1 10	1 10	1.15	1 05	.....	1.10
Overman	"	2.00	15	.16	.16	15	.....	.14
Potosi	"	3 00	38	.39	39	.38	.....	.39
Savage	"	2 50	26	24	25	.23	.....	.26
Seg. Belcher & M	"	2.00	.02	02	.02	.....	.....	.....
Sierra Nevada	"	3.00	78	76	.77	74	.....	.74
Silver Hill	"	1.00	.02	02	.02	.....	.....	.02
Standard	Cal.	10.00	2 60	2 60	2 65	2 50	.....	2.50
Union Con	Nev.	2.50	41	44	45	41	.....	.43
Utah Con	"	1.00	.16	.16	16	15	.....	.15
Yellow Jacket	"	3.00	.38	38	.38	.36	.....	.36

Official telegraphic quotations of San Francisco Stock Exchange *Holiday.

ROSSLAND, BRITISH COLUMBIA.* May 25.

NAME OF COMPANY.	No. of shares.	Par value.	Selling price.	NAME OF COMPANY.	No. of shares.	Par value	Selling price.
Brandon & Gold. Cr.	1,500,000	$1	$0 28	Lerwick	500,000	$1	.....
Brit. Amer. Corp'at'n	7,500,000	5	6.25	Lily May	1,000,000	1	.....
Brit.Col. Dev. Co	1,500,000	2½	5 50	Lon.&Van.Fin.Dev.Co	500,000	5	.....
Canadian Gold Fields	10,000,000	0 10	.10	London B. C. Gold F.	250,000	5	$9.50
Cariboo	1,500,000	1	1 30	Monte Cristo	1,000,000	1	.....
Commander	500,000	1	.....	New Gold Fields, B.C.	250,000	1	5.25
Deer Park	1,000,000	1	.....	Novelty	1,000,000	1	.....
Dundee	1,000,000	1	24	Queen Bess Prop.	120,000	5	3.75
Evening Star	1,000,000	1	.12	Rambler Con	1,000,000	1	86
Fern	200,000	¼	.50	Reco	1,200,000	1	.....
Gold Fields of B.C.	3,000,000	3½	5.25	Red Mt. View	1,000,000	1	.....
Hall Mines	250,000	5	2 75	St. Elmo	1,000,000	1	.....
Hattie Brown	1,000,000	1	.....	St. Paul	1,000,000	1	1.10
Homestake	1,000,000	1	.04	Sarah Lee	1,000,000	1	.....
Iron Colt	1,000,000	1	.....	Silver Queen	1,500,000	1	.15
Iron Horse	1,000,000	1	10	Slocan Star	500,000	1	2.00
Iron Mask	500,000	1	.65	Vic.Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo	500,000	1	.....	War Eagle Con	2,000,000	1	3.75
Kenneth	1,000,000	1	.....	Waverly Mines	100,000	5	2.00
Keystone	1,500,000	1	.....	White Bear	3,000,000	0 10	0.08
KootenayGold Fields	20,000	5	.....	Wild Horse	400,000	1	.....

* From Our Special Correspondent.

VALPARAISO, CHILE.* April 22.

NAME OF COMPANY.	Location.	Capital paid.	Sh.Val. paid up.	Last Div'nd. Amt.	Last Div'nd. Date.	Prices. Bid.	Prices. Asked.	Prices. Last sal
Arturo Prat, silver	Chile	$3,300,000	$100	4 p. c.	1897	24	25	24½
Caracoles, silver	" "	315,000	100	10 "	1894	.....	.....	.....
Huantajaya (mine) silver	" "	1,000,000	100	13 "	1894	.....	.....	.....
Huanchaca, silver	Bolivia	8,000,000	25	4 "	1895	32	38	40
Oruro, silver	Chile	800,000	200			240	300	300
Todos Santos, silver	" "	2,000,000	100	1 "	1895	6	8	6
Agua Santa nitrate	" "	3,000,000	50	5 "	1898	162	165	165
Antofagasta, nitrate	" "	2,000,000	200	2 "	1898	140	145	140
Soc. Internacional, nitrate	" "	960,000	60			3	5	.....
Union, nitrate	" "	3,000,000	200			38	42	40

* Special report of Jackson Bros. Values are in Chilean pesos or dollars.

SALT LAKE CITY, UTAH.* May 27

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No of shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$1.45	.....	Homestake	400,000	$1	$0.12½	$0 13
Alice	400,000	25	.72½	.....	Horn Silver	400,000	25	1 45	2 00
Anchor	150,000	10	.70	$1.00	Little Pittsburg	400,000	5	09	10¾
Buckeye	500,000	1	.09¾	.04	Lower Mammoth	150,000	1	58	.59
Bullion-Beck & Ch.	100,000	10	6 00	.....	Mammoth	400,000	5	1.85	1 95
Centennial Eureka	30,000	50	40 00	50 00	Mercur	200,000	25	7 80	7.50
Chloride Point	500,00	1	.90	.96	Northern Light	400,000	5	.61	62
Daisy	500,000	3	.21¾	.21¾	Omaha	300,000	2	.30	.35
Dalton	500,000	5	.02	02¾	Ontario	150,000	100	7.50	.....
Dalton & Lark	2,500,000	1	.09	.10	Richmond-An	500,000	1	03	.....
Daly	150,000	20	1.40	1.43	Sacramento	1,000,000	5	45	47
Daly West	150,000	20	9 97	9 99	Silver King	150,000	20	37 50	50.00
Dexter	200,000	5	2.44	2 50	Star Consolidat'd	500,000	1	.96	.96¾
Eagle	150,000	1	.07	.07¾	Sunbeam	250,000	1	45	47¾
Eagle & Blue Bell	250,000	1	1 09¾	1.1	Sunshine	250,000	10	62½	72
Emerald	300,000	1	.10	.14¾	Swansea	100,000	5	3 96	4 02½
Four Aces	250,000	1	.20	.20¾	South Swansea	150,000	1	1.48	1.49¾
Galena	100,000	10	.80	83¾	Tetro	300,000	1	06	.10
Geyser Marion	300,000	5	.62½	63¾	Utah	100,000	1	1 00	1.10
Grand Central	250,000	1	7 95	8.00	Valeo	200,000	10	.97	1.00

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

SPOKANE WASH.* May 27

NAME OF COMPANY.	Par val.	No. of Shares.	May 21. B.	May 21. A.	May 22. B.	May 22. A	May 23. B.	May 23. A.	May 24. P.	May 24. A.	May 25. B.	May 25. A.	May 26 B.	May 26 A.	Sales.
Ben Hur	$1	60,000	.18	.15	.14	.16	14	.16	13	16	13	16	.15	.17	2,750
Black Tail	1	1,000,000	.15	17	17	.19	.20	2.	.19	2.	.21	25	.23	28	143,000
Butte & Boston	1	1,000,000	06	.18	06	08	07	18	06	08	06	08	.07	08	8 000
Insurgent	0.10	1,000,000	09¾	.10	10	.11	09¾	10¾	10¾	11¾	10	.11	1	2	96,0 0
Jim Blaine	1	1,000,000	38	40	.38	.40	.39	41	39	4	.39½	.42	40	42	430,000
Lone Pine	1	1,000,000	47	50	.48	50	.48	.50	.49	52	49	.51	49	53	482 000
Morning Glory	0 10	1 000,000	14	16	14	18	13	15	.12	4	13	15	13	.5	3,250
Mountain Lion	0 10	1,000,000	1 33	1 35	1 32	1 36	1 34	1.36	1 31	1 38	1 34	1 38	1 35	1 38	78,300
Pearl	1	1,000,000	.12	14	13	14	14	16	.14½	.16	.14½	15	15	16	117,5 0
Princess Maud	0.10	1,000,000	06	.07	07½	06½	06	.09	05¾	06	.05¾	.17	06	.7	32,000
Quilp	1	1,000,000	.10	12	11	13	11	.1	11	.12	.10	12	.11	.12	5,500
Rebate	0 10	1,000,000	17	.18	17	18	17	.9	17	.19	.17	.19	17	.18	9,000
Republic Con	1	3,000,000	1 29	1.3	1.32	1.34	1 31	1.33	1.28	1.30	1.32	1.33	1.35	1 37	68,000
San Poil	1	500,0 0	68	70	.69	70	67	69	68	69	68	.7	69	70	17,000
Surprise	1	1,000,000	21	25	21	28	28	32	.29	33	.30	.33	.32	.35	160,000
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Specially reported by the British-Canadian Investment and Mining Syndicate. Total Sales, 2,079,300 shares.

TORONTO, CAN.*

NAME OF COMPANY.	Par val.	May 24. B.	May 24. A.	May 25. B.	May 25. A.	May 26. B.	May 26. A.	May 27. B.	May 27. A.	May 29. B.	May 29. A.	May 30. B.	May 30. A.	Sales
Ontario:														
Golden Star	$1	.65½	.64	60½	.61½	58¾	.60	57¾	.60	63¾	65	.62¾	.64½	17,500
Ham Reef	1	.39¾	.40	.59¾	40	.38½	40	.39½	41	.38¾	.40	.38	.39½	5,100
Hiawatha	1	.24	.25	.4	.25	.....	.....	.23	.25	.23	.25	.....	.....	800
J. O. H.	1	.07¾	.09½	.07½	.08¾	07¾	.08½	.07½	08¾	.07¾	08½	.07½	08	1,0 0
Raw Hide	1	.....	.....	.....	.....	.35	4	39	42	.39	.42	.32	.40	1,000
Sentinel	1	.16	.18½	.16¾	.18¾	.16	.18½	.16	.18½	16	.19	.....	.....	.....
Sup G & C	1	.06	.07	.06	.07	.....	.....	06	.07	06¾	.07¾	.....	.....	1,0 0
British Col.:														
Alice A	1	.....	.....	.20	.20½	.22½	.....	.....	.....	.21½	.....	.18½	21	3,000
Athabaska	1	.40	.42½	.40½	.40¾	.39½	41	.40¾	.40½	.39½	42	.40	.41	8,500
Big Three	1	.22¾	.24	.22	.23½	.21	.22½	.21	.23½	.20	.22½	.....	.....	1,000
C'riboo	1	1.35	1.40	1.35½	1.37½	1.36	1.38	1.35¾	1.37½	1.30	1.37	.....	.....	3,5 0
Cr'wsN.P.C.	25	35.00	43.00	35.00	43.00	35.00	43 00	31.00	40.00	31.00	40 00	.....	.....	10
Dardanelles	1	.13¾	.18¾	.....	.....	12¾	13½	.13	.18¾	.13	13¾	.13	.13¾	12,500
Deer Park	1	.04	.05	.04	.05	.03¾	04¾	.04	04¾	03	.05	.04½	.04½	2,000
Iron Mask	1	.53	67	.....	.....	50	63½	57	65	55	.65	.....	.....	.....
Minnehaha	1	.22	.26	.22	.26	.23	.25	.21½	.25	.21	.25	.20	.24	500
Monte Crist	1	.10	.12	.10	.12	.10	.11½	.10	.11½	.09½	1 ½	.09¾	.11	625
Morrison	1	.15½	.18	.15	.17½	.15	.17	15	.17	15	.17	.15	.18	.....
N'rt'n Belle	1	.02¾	.04	.03	.03¾	03	.04	.02¾	.03½	03	.04	.02¾	03	.....
Rambler C.	¼	33	.34½	.33	.34	.33	35	32¾	34¾	32½	.35	.32½	.35	11,000
Republic	1	1.30	1.35	1 30	1.35	1.30	1.34	1 31½	1 35	1 31½	1.35	1.32	1.33½	11,600
St. Elmo	1	.05¼	.06	.05	.07	.05	.06	.05	.06	.05	.07	.04	.07	500
Smuggler	1	0¾	.04	.03¾	.03¾	.03¾	03¾	.03¾	.03¾	.03¾	.03¾	.03¾	.03¾	4.400
Van Anda	1	.05¾	.06½	.06	.06½	.06	.06¾	.05¾	.06½	.06¼	.06¾	.06¼	.06¾	9,500
Victory Tri.	1	.06¾	08	.07¾	.08	07	.08	.07¾	.08½	.07¾	.08½	.07	.09	7,000
White Bear	1	.04¾	.4¾	.04¾	.04¾	.04¾	.04¾	.04	.05	.04¾	.04¾	.03¾	.05	1,500
Winnipeg	1	.31½	.32	.30½	.3 ½	30¾	32	.30¾	.32½	.30½	.33	.28	.34	6,000
Develop Co.														
B.C. Gold F.	1	.04¾	.05	.04½	.05	.04½	05¾	.04½	.05	.04¾	.05	.04¾	.05¾	500
an.G.F.S.	0.10	0 ½	.07	.01¾	.03½	.07	.07	.05½	.07	.05	.07	.05	.06¾	
Gold Hills	1	05	07	.06	.07	.05½	07	.05½	.07	.05	.07	.05¾	.06¼	500

* Official quotations of the Toronto Mining and Industrial Exchange. Total shares sold, 113,985.

MEXICO. May 25.

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.
Chihuahua:				
Gloria	1,500	.....	$50	$50
Durango:				
Barradon y Cab	2,400	.....	100	80
Candelaria de Pan.	1,200	.....	20	20
Capuzaya	2,400	.....	50	30
Penoles	2,500	30.00	2,000	2,000
Restauradora	10,000	.....	30	20
Rosario y Anexas	4,800	.....	10	10
Guanajuato:				
Angustias	2,400	5.00	390	395
Cinco Senores y An	2,000	15.00	390	370
El Oro	500	.....	30	30
do. pref.	2,000	.....	30	30
Guadalupe Hacie'a	10,000	2 00	235	240
Trinidad, aviador	2,000	.....	1.5	140
do. aviado	400	.....	100	125
Zona Minera de Paz	2,400	.....	65	60
Hidalgo:				
Amistad y Concord.	9,600	2.00	32	30
Arevalo	720	.....	200	180
Bartolome de Med.	2,000	3.00	80	70
Carmen	1,100	7.75	470	465
Luz de Maravillas	1,100	.....	200	180
Pabellon	1,000	27.89	30	20

NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g	Prices. Cl'g.
Hidalgo:				
Real del Monte	2,354	10 00	760	750
San Francisco He	6,000	2.00	190	65
San Rafael y An	1,200	12.00	1,0 0	1,000
do. aviado	1,200	5.00	410	420
do. del Oro	3,000	5.00	20	5
Soledad	980	5 00	35	370
Sorpresa	960	5.00	210	225
Union Hacienda	2,000	5.00	385	380
Mexico:				
Coronas	500	.....	75	75
Esperanza y An	3,000	10 00	1,750	1,730
Michoacan				
Luz de Borda ava	3,000	.....	30	40
do aviado	1,000	.....	30	30
Pueblo:				
Tlauzingo	2,400	.....	27	28
S. Luis Potosi:				
Concep. y An	2,400	.....	80	60
Sta. MariadelaPaz	2,400	10 00	715	720
Zacatecas:				
Asturiana y An	2,500	10.00	80	60
Cabezon	2,400	.....	15	15
C'delar. de Pinos	2,500	.....	95	90
Palma de Somb	2,400	.....	100	80

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100 Prices are in Mexican dollars.

SHANGHAI, CHINA.* April 24.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelubu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 6.20
Junjom Mg., Ltd.	"	60,000	5	5	.....	.....	" 4 56
do. pref	"	30,000	1	1	.....	.....	" 1 28
Raub A'ltan G. Mg	"	200,000	£1	14s. 10 t.	July, 1898	.51	" 44.16
Sheridan Con. M. & M.	Colorado, U.S	20,000	Taels 100	Taels 100	.....	.....	" 4.00

*Special report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

STOCK QUOTATIONS.

LONDON May 19.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
		£ s. d.	£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g.	Alaska	£200,000	1 0 0	0 4.8	May, 1899	17 6	1 2 6
Alaska-Treadwell, g.	"	1,000,000	5 0 0	1 6	"	4 12 6	4 17 6
Anaconda, C., s.	Montana	6,000,000	5 0 0	5 1¼	May, 1899	12 12 6	12 17 6
Cariboo, g f., pref.	BritishCol'mbia	160,000	5 5 0	.....	.....	10 0	15 0
Chiapas, g., s., c.	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	1 1 3	1 2 6
De Lamar, g., s.	Idaho	400,000	1 0 0	6	May, 1899	5 0	7 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g.	California	80,000	1 0 0	.....	.....	1 3	3 9
Grand Central, g., s.	Mexico	300,000	1 0 0	2 0	Mar., 1899	1 6	1 8 9
Hall Mines, c., s.	British Col	250,000	1 0 0	1 0	May, 1898	11 3	13 9
Le Roi, g.	"	1,000,000	5 0 0	.....	.....	7 15	7 17 6
Lillie, g.	Colorado	250,000	1 0 0	2½	May, 1899	1 7 6	1 10 0
Lillooet, F. R. & Car., g.	British Col	300,000	1 0 0	.....	.....	5 0	10 0
Montana, g., s.	Montana	660,000	1 0 0	6	Apr., 1899	7 6	8 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 6 3	7 12 6
Newfoundland, c.	Newfoundland	250,000	1 0 0	.....	.....	1 5 0	1 10 0
Palmarejo & Mexican, g., s	Mexico	80,000	1 0 0	.....	.....	3 0	4 0
Plumas-Eureka, g.	California	281,250	2 0 0	0 6	Oct., 1898	2 6	3 6
Richmond, g., s., l.	Nevada	270,000	5 0 0	0 6	Dec., "	5 0	7 6
Sierra Buttes, g.	California	245,000	2 0 0	0 6	Apr., "	8	10
Colombia Hydraulic, g.	Colombia	75,000	1 0 0	6	Jan., 1899	7 6	10 0
Copiapo, c.	Chile	200,000	2 0 0	2 6	Apr., 1899	3 5	3 10 0
Frontino & Bolivia, g.	Colombia	140,000	1 0 0	1 6	Mar., 1899	2 0 0	2 5 0
St. John del Rey, g.	Brazil	600,000	1 0 0	1 0	Jan., 1899	1 7 6	1 8 6
Tolima A., s., g.	Colombia	70,000	5 0 0	5 0	July, 1897	1 5 0	1 15 0
Tolima B., s., g.	"	30,000	5 0 0	5 0	"	5 0	5 0
UtahCon. g. (HighFlyer)	Utah	800,000	1 0 0	rts.	Mar., 1898	8 17 6	9 2 6
Ymir, g.	BritishCol'mbia	200,000	1 0 0	.....	.....	1 6	1 8 9
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 3 6	1 4 0
Linares, l.	Spain	45,000	5 0 0	12 6	Mar., 1899	8 10 0	9 0 0
Mason & Barry, c., sul.	Portugal	630,000	2 0 0	5 0	Apr., 1899	4 2 6	4 7 6
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	50 2 6	50 7 6
" pref.	"	1,625,000	5 0 0	2 6	May, 1899	6 3 9	6 6 3
Tharsis, c.	"	1,250,000	2 0 0	11	"	1898 8 15 0	9 5 0
Assoc. Gold Mines	W. Australia	5,000,000	1 0 0	2 0	Feb., 1899	9 3 9	9 6 3
Broken Hill Prop., s.	N.S.Wales	384,000	8 0 0	1 0	May, 1899	2 5 0	2 7 6
Great Boulder, Prop.	W. Australia	1,750,000	1 0 0	2 x all	May, 1899	1 10 0	1 11 6
Hannan's Brownhill, g.	"	110,000	1 0 0	7 6	May, 1899	8 12 6	8 15 0
Ivanhoe Gold Corp.	"	1,000,000	5 0 0	5 0	Apr., 1899	11 3 9	11 6 3
Kalgurlie, g.	"	120,000	1 0 0	rts.	Feb., 1899	9 10 0	9 12 6
Lake View Consols, g.	"	250,000	1 0 0	5 0	May, 1899	19 1 3	19 18 9
Mt. Lyell M. & R., l., c.	Tasmania	975,000	3 0 0	2 6	Apr., 1899	9 10 0	9 15 0
Mt. Morgan, g.	Queensland	1,000,000	1 0 0	2	May, 1899	5 7 6	5 12 6
Waihi, g.	New Zealand	320,000	1 0 0	2 0	Mar., 1899	6 15 0	7 0 0
West Aust. Jt. Stk. L. & F.	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	8 6	9 0
Champion Reef, g.	Colar Fields	220,000	10 0 0	3 6	May, 1899	5 1 3	5 3 9
Mysore Gold, g.	"	250,000	10 0 0	5 0	Mar., 1899	5 10 0	5 12 6
Nundydroog, g.	"	242,000	1 0 0	1 6	" 1899	3 1 3	3 3 9
Ooregum, g.	"	145,000	1 0 0	1 6	Apr., 1899	3 12 6	3 15 0
" pref. g.	"	120,000	1 0 0	1 0	" 1899	4 5 0	4 10 0
Angelo, g.	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 17 6	8 2 6
*Bonanza, g.	"	200,000	1 0 0	10 0	Dec., 1898	4 17 6	5 2 6
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 11 3	3 13 9
Cape Copper, c.	"	600,000	1 0 0	7 0	Jan., 1899	4 12 6	4 17 6
" pref	"	150,000	2 0 0	7 0	" 1899	4 12 6	5 1 2 6
City & Suburban (New), g.	Transvaal	1,360,000	4 0 0	6 0	Mar., 1899	6 0 0	6 1 0
Con Deep Level, g.	"	200,000	1 0 0	xb.	Apr., 1898	3 12 6	3 17 6
Crown Reef, g.	"	120,000	1 0 0	10 0	May, 1899	18 5 0	18 10 0
De Beers Con., d.	Cape Colony	3,950,000	5 0 0	£1	Mar., 1899	9 15 0	0 0 0
Durban Roodepoort, g.	Transvaal	135,000	1 0 0	5	Mar., 1899	6 5 0	6 10 0
Ferreira, g.	"	90,000	1 0 0	30 0	Feb., 1899	24 10 0	25 0 0
Geldenhuis Deep, g.	"	350,000	1 0 0	7 6	May, 1899	11 5 0	11 15 0
Geldenhuis Est., g.	"	200,000	1 0 0	7 6	" 1899	8 10 0	8 15 0
Ginsberg, g.	"	160,000	1 0 0	4 0	Feb., 1899	3 15 0	4 0
Henry Nourse, g.	"	125,000	1 0 0	10 0	Feb., 1899	9 0 0	9 5 0
Heriot (New), g.	"	115,000	1 0 0	5 0	May, 1899	7 1 0	7 12 6
Jagersfontein, d.	Orange Fr. St.	1,000,000	5 0 0	1 0	Mar., 1899	4 12 6	14 15 0
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 14	1 16 3
Jubilee, g.	Transvaal	50,000	1 0 0	5 0	May, 1899	4 17 6	5 2 6
Jumpers, g.	"	100,000	1 0 0	10 0	Feb., 1899	6 7 6	6 10 0
Kleinfontein, g.	"	275,000	1 0 0	2	Mar., 1899	2 18 9	3 1 3
Langlaagte Estate, g.	"	500,000	1 0 0	3 0	Mar., 1899	3 11 3	3 13 9
May Con., g.	"	275,000	1 0 0	3 0	Feb 1899	5 14 9	5 18 3
Meyer & Charlton, g.	"	85,000	1 0 0	rts.	Apr., 1899	6 0 0	6 15 0
Namaqua, c.	Cape Colony	200,000	1 0 0	2 6	Dec., 1898	4 0 0	4 5 0
Primrose (New), g.	Transvaal	300,000	1 0 0	6	Feb., 1899	4 15 0	4 18 9
Rand Mines, g.	So. Africa	400,000	1 0 0	£.	Feb., 1899	42 12 6	43 17 6
Robinson, g.	Transvaal	2,750,000	5 0 0	9	" 1899	0 1 0	11 0 0
Sheba, g.	"	1,100,000	1 0 0	0 6	July, 1898	6 3	8 9
Sm. & Jack Prop., g.	"	5,000,000	5 0 0	4 6	Jan., 1899	6 8	6 11 3
* Vemmer, g.	"	60,000	1 0 0	4 0	Jan., 1899	11 0 0	13 10 0
Wolhuter, g.	"	800,000	4 0 0	2 0	Feb., 1899	5 5	5 8 9
Worcester, g.	"	100,000	1 0 0	3 0	May, 1899	3 0 0	3 5 6

* Dividend pending. † Ex-rights.

PARIS. May 10.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2,290.50	2,279.00
" " Firminy	"	"	3,000,000	500	85.00	3,795.00	3,800.00
" " Five-Lille	"	"	12,000,000	500	35.00	597.50	595.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,815.00	4,600.00
" " la Marine	France	Steel mfrs.	30,000,000	500	40.00	1,760.00	1,760.00
" " Longwy	"	"	.....	500	95.00	1,191.00	1,200.00
Anzin	"	Coal	.....	.....	190.00	5,825.00	5,815.00
Biache-St. Vaast	"	Steel	.....	1,000	160.00	3,800.00	3,800.00
Boleo	Lower Cal.	Copper	.....	500	1.07	2,740.00	2,800.00
Briansk	Russia	Coal & Iron	.....	500	.....	1,460.00	1,487.50
Bruay	France	Coal	5,000,000	400	900.00	42,250.00	42,250.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	121.00	122.00
Champ d'Or	"	Gold	3,375,000	25	.....	61.75	63.00
Courrieres	France	Coal	600,000	500	60.00	2,400.00	2,375.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	745.00	746.00
Denain-Anzin	France	Steel	.....	500	20.00	965.00	940.00
Dombrowa	Russia	Coal	.....	500	12.50	1,160.00	1,175.00
Donetz	"	Steel	.....	.....	.....	1,425.00	1,495.00
Dourges	France	Coal	.....	1,000	300.00	23,450.00	24,500.00
Dynamite Centrale	"	Explosives	.....	500	12.50	540.00	542.00
Epinac	"	Coal	.....	2,500	20.83	585.00	585.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,249.00	1,246.00
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	7.50	7.75
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	61.00	60.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	87.50	93.50
Lagunas	Chile	Nitrates	16,250,000	125	12.50	85.00	85.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	690.00	679.00
Lautaro	Chile	Nitrates	13,750,000	125	.....	100.00	100.00
Malfidano	Italy	Zinc	12,500,000	500	40.00	1,700.00	1,470.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	30.00	594.00	597.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,291.00	1,125.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	833.00	845.00
Napthe, Le	"	"	.....	.....	.....	2,200.00	2,100.00
Napthe Nobel	"	"	.....	.....	.....	655.00	655.00
" " parts	"	"	.....	.....	.....	13,250.00	13,200.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	30.00	409.00	410.00
Penarroya	Spain	Coal, etc.	.....	500	65.00	2,695.00	2,670.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	8.25	8.25
Rio Tinto	Spain	Copper	40,625,000	125	47.70	1,270.00	1,235.00
" preferred	"	"	40,625,000	125	.....	162.00	162.00
Rive-de-Gier	France	Coal	.....	.....	.....	22.00	20.00
Robinson	S. Africa	Gold	68,750,000	125	12.50	272.00	278.00
St. Etienne	France	Coal	.....	.....	18.00	491.00	495.00
Salines de l'Est	France	Salt	.....	500	11.50	275.00	270.00
Salines du Midi	France	" etc	.....	500	25.00	865.00	865.00
Seis Gem. de la Rus. Mer	Russia	" etc	.....	500	25.00	581.00	611.00
Tharsis	Spain	Copper	33,750,000	50	8.75	245.00	229.00
Vicoigne-Noux	France	Coal	.....	1,000	700.00	28,000.00	28,000.00
Vieille Montagne	Belgium	Zinc	9,000,000	90	30.00	845.00	85.00

MEETINGS.

NAME OF COMPANY.	Location	Meeting.	Date.	Place of Meeting.
Alta Argent.	Colorado	Annual	June 8.	Des Moines, Ia.
Breece	Colorado	Special	June 5	24 Broad st., New York City.
Bunker Hill & Sull.	Idaho	Annual	June 17.	Crocker Bldg, San Francisco, Cal.
Crown Point	Nevada	"	June 7	Mills Building, San Francisco, Cal.
East Sierra Nevada	Nevada	Special	July 17.	San Francisco, Cal.
Fresnillo	Mexico	Annual	June 6.	27 William st., New York City.
Green Gold	California	Special	June 12	San Francisco, Cal.
Helena & Iahaho	Idaho	Annual	June 10.	Helena, Mont.
Homestake	S. Dak.	"	July 15.	Mills Building, San Francisco, Cal.
Ivanhoe	California	Special	July 10	Mills building, San Francisco, Cal.
Mexes	California	"	June 6.	San Francisco, C. 1.
Merced	California	"	June 27.	Butte, Mont.
Morgan	Utah	"	June 3.	Masonic Building, Salt Lake City, Utah.
National C	California	Annual	June 6.	San Francisco Cal.
Nevada Quee	Nevada	Special	June 2	Tusca ora Nev
Old Dominion Cop.	Arizona	"	June 15	Jersey City, N. J.
Parrot	Montana	Ann al	June 28	Butte, Mont.
Pennsylvania Coal	Penns'v'ia	"	June 14.	Dunmore, Pa.
Quicksilver	California	"	June 9.	2 Nassau st., New York City.
Quincy	Michigan	"	June 7.	45 Broadway, New York City.
Rover	Utah	Special	June 15	66 McCornick Bldg, Salt Lake City, Utah.
Ontic		Annual	June 4	11 Broadway New York City.
Union Con	Nevada	"	July 19	139 Montgomery st., San Francisco Cal.
Yellow Jacket	Nevada	"	July 20	Gold Hill, Nev.

DIVIDENDS.

NAME OF Co.	Date.	Am't.	Paid 1899.	Total.
Alamo, Utah	.....	.....	$2,500	$2,500
Alaska-Mexican	.....	.....	36,000	353,031
Alaska-Treadwell	.....	.....	150,000	4,070,000
Ætna Con.	.....	.....	20,000	170,000
American Gold	.....	.....	21,000	407,000
Anaconda Copper	May 3	$1,500,000	1,500,000	9,750,000
Anchoria-Leland	.....	.....	36,000	198,000
Apollo Con., Alas	.....	.....	40,000	140,000
Argonaut, Col.	.....	.....	80,000	260,000
Bald, Butte	May15	15,000	52,500	702,148
Boston & Cal.	.....	.....	36,000	36,000
Boston & Colo. Sm.	.....	.....	150,000	375,000
Boston & Mont.	May29	900,000	1,650,000	10,775,000
Breece	June 1	10,000	20,000	50,000
Bul. Bec. & Champ.	May15	10,000	50,000	2,368,400
Bunker Hill & S.	.....	.....	105,000	705,000
Calumet & Hecla	Jun 28	2,000,000	6,000,000	62,850,000
Cariboo	.....	.....	12,000	248,965
Centenn'l Eureka	May15	15,000	75,000	2,105,000
Central Lead	May15	5,000	25,000	107,000
Charleston, S. C.	June 1	20,000	20,000	200,000
Colorado Sm.	.....	.....	100,000	1,945,000
D'f'Tr'l No. 2, Wash	May15	2,500	12,500	30,000
Doe Run	May15	2,500	12,500	72,500
De Lamar, Idaho	May 9	48,000	48,000	2,346,000
Empire State, Ida.	Jun 15	20,000	104,331	166,233
Ferris-Haggerty, Wyo	.....	.....	5,000	5,000
Garfield Con.	May20	12,000	12,000	34,000
Gold Coin, Vict.	May24	10,000	50,000	200,000
Golden Cycle	May15	5,000	25,000	178,500
Gold King, Col.	May10	20,000	30,000	30,000
Golden M. & Ex.	.....	.....	10,000	10,000
Golden Star, Ont.	July 1	11,000	41,000	41,000
Grand Central, Ut.	May10	37,500	175,000	493,750
Grass Valley Ex.	.....	.....	15 000	15,00
Gwin, Cal	May10	5,000	15,000	66,500
Highland	May15	20,000	100,000	3,884,718
Holy Terror	.....	.....	5,000	122,000
Homestake	May25	62,500	312,500	7,493,750
Horn Silver	.....	.....	20,000	5,250,000
Idaho, B. C.	.....	.....	28,000	292,000
Isabella	.....	.....	135,000	405,000
Jack Pot	.....	.....	25,000	25,000
Jamison, Cal.	.....	.....	$11,700	$35,100
Lake Superior Ir.	.....	.....	84,000	227,860
Lillie	June 1	12,500	75,000	240,360
Mead, Cal	.....	.....	20,000	100,000
Mercur	.....	.....	25,000	1 266,000
Modoc	May25	10,000	50,000	130 000
Montana, Ltd.	.....	.....	98,855	453,700
Mont. Ore Pur.	May24	80,000	320,000	1,120,000
Morning Star, Cal.	May15	6,000	38,40	726,600
Moulton, Mont.	.....	.....	20,000	480,000
Mt. Shasta, Cal.	May15	6,000	6,000	6,000
Napa Con.	.....	.....	40,000	990,000
New Idria	.....	.....	40,000	120,000
N.Y.& H.-Rosario	May20	15,000	60,000	1 050,000
North Star, Cal.	.....	.....	50,000	550,000
Olive	.....	.....	12,000	12,000
Original Empire, Cal	May10	50,000	50,000	500,000
Osceola	Jun.15	279,000	279,000	2,801,500
Parrot	May31	345,000	552,000	2,690,898
Pennsylvania.	May 9	2,575	12,875	64,525
Pioneer, Cal.	.....	.....	12,500	62,500
Portland	May15	60,000	300,000	2,137,080
Queen Bess, B. Col.	.....	.....	12,500	.....
Quicksilver (Pref.)	May 5	21,500	21,500	1,845,411
Quincy	.....	.....	350,000	10,470,000
Rambler Cariboo	.....	.....	10,000	50,000
Republic, Wash.	Jun 15	31,500	63,000	183,000
Royal, B. C.	.....	.....	25,000	1,025,000
Sacramento	June 1	5,000	30,000	87,500
St. Joseph Lead.	.....	.....	37,500	2,822,000
Silver King.	May10	50,000	225,000	1,975,000
Small Hopes	.....	.....	25,000	3,325,000
Smuggler	.....	.....	10,000	1,105.000
South Swansea	.....	.....	15,000	119,060
Standard, Cal.	May24	20,000	20,000	3,859,226
Standard, Ida.	.....	.....	30,000	1,745,000
Strong	.....	.....	100.000	625,000
Swansea	May10	5,000	25,000	161,500
Tamarack	Jun 27	240,000	240,000	5,910,000
Tomboy	May31	80,000	80,000	730,000
Utah, Utah	.....	.....	2,000	179.000
Vindicator	.....	.....	76,125	203.000
War Eagle, B. C.	May15	$26,250	$131.250	$309,000
Wolverine	.....	.....	9 ,000	150,000
Yellow Aster	May10	10,000	45.000	203,789
Grand Total.		$5,985 32	$15,123,286	168,429,418

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Delinq.	Sale.	Amt.
*Alta	Nev.	62	June 26	July 17	.05
Andes	Nev.	48	June 7	June 28	.05
Arrastravillo	Cal.	.....	June 19	.....	.10
Con. Cal. & Va	Nev.	13	May 24	June 14	.25
Crown Point	Nev.	76	May 18	June 8	.10
Florence	Utah	2	June 15	July 1	.00½
Geyser	Colo	..	May 11	June 10	.10
Granite Hill	Cal	..	June 14	.....	.03
Hale & N'rcross	Nev.	2	May 15	June 5	.10
*Little Pittsburg	Utah	..	June 24	.....	.00½
Live Oak & Minuett	Cal	..	June 8	.....	.05
*Marina Marsicano	Cal	..	June 14	.....	.05
Mexican	Nev.	61	June 12	July 1	.10
Murray Hill	Utah	2	June 10	July 10	.00½
New Klondike	Utah	..	June 5	June 27	.01
Omaha Con.	Cal	4	June 28	July 17	.25
Potosi	Nev.	52	May 25	June 1	.10
*Reddik	Nev.	..	June 19	.....	.05
Success	Utah	5	May 20	June 10	.00½
Seg. Belcher & Mides Con	Nev.	23	June 5	June 24	.05
Sunbeam Con.	Utah	22	June 8	June 24	.02
Texas	Cal.	..	June 1	.....	.15

*New Assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Ætna Cons., q.	Cal..	$500,000	100,000	$5	*	.....	.....	.....	$170,000	April.	1899	.10
2	Alaska-Mexican, g.	Alask	1,000,000	200,000	5	.....	.....	.....	.....	353,031	April.	1899	.10
3	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*	.....	.....	.....	4,070,000	April.	1899	.37½
4	Alamo, g. c. i.	Utah.	125,000	125,000	1	$937	Mar..	1898	.00¼	2,500	April.	1899	.02
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*	.....	.....	.....	1,075,000	April.	1898	.05
6	American Gold, g. s. c. l	Colo..	3,000,000	300,000	10	*	.....	.....	.....	407,000	Mar..	1899	.07
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25	.....	.....	.....	.....	9,750,000	May..	1899	1.25
8	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*	.....	.....	.....	198,000	April	1899	.03
9	Appie Ellen, g.	Colo.	600,000	600,000	1	.....	.....	.....	.....	25,000	Aug..	1898	.01
10	Argonaut	Cal..	2,000,000	200,000	10	.....	.....	.....	.....	260,000	April.	1899	1.10
11	Associated, g.	Colo..	1,250,000	1,250,000	1	*	.....	.....	.....	72,000	Dec..	1898	.01
12	Atlantic, c.	Mich.	1,000,000	40,000	25	.....	.....	.....	.....	780,000	Feb..	1898	1.00
13	Aurora, l.	Mich.	2,500,000	100,000	25	*	.....	.....	.....	750,000	May..	1898	.50
14	Bald Butte	Mont.	250,000	250,000	1	*	.....	.....	.....	672,648	Mar..	1899	.06
15	Big Six, g. s.	Colo..	500,000	500,000	1	.....	.....	.....	.....	15,000	May..	1898	.00½
16	Boston & California	Cal..	600,000	600,000	1	.....	.....	.....	.....	36,000	Mar..	1899	.06
17	Boston & Colorado Sm.	Colo..	750,000	15,000	50	.....	.....	.....	.....	375,000	April.	1899	5.00
18	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	*	.....	.....	.....	10,775,000	May..	1899	6.00
19	Breece, l.	Colo..	5,000,000	200,000	25	.....	.....	.....	.....	50,000	June.	1899	.05
20	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	*	.....	.....	.....	2,358,400	April.	1899	.10
21	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10	.....	.....	.....	.....	705,000	April.	1899	.07
22	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	.....	.....	.....	.....	60,850,000	Mar..	1899	10.00
23	Cariboo, g.	B.C..	800,000	800,000	1	.....	.....	.....	.....	248,965	Feb..	1899	.01½
24	Centen-l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	2,091,000	April.	1899	.50
25	Central Lead, l.	Mo...	1,000,000	10,000	100	*	.....	.....	.....	107,000	May..	1899	.50
26	Champion, g. s.	Cal..	340,000	34,000	10	.....	.....	.....	.....	296,200	April.	1898	.25
27	Charleston, p. r.	S. C..	1,000,000	10,000	100	*	.....	.....	.....	180,000	Dec..	1898	1.50
28	Colorado, Sm., g. s. c.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	1,945,000	Jan..	1899	1.00
29	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*	.....	.....	.....	20,000	Dec..	1898	.02
30	Creston Leasing	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	54,000	Dec..	1898	.01
31	Crœsus	Cal..	1,000,000	200,000	5	.....	.....	.....	.....	30,000	Dec..	1898	.15
32	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10	*	.....	.....	.....	232,000	Dec..	1898	.02
33	Daly, s. l.	Utah.	3,000,000	150,000	20	.....	.....	.....	.....	2,925,000	Mar..	1897	.25
34	Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*	.....	.....	.....	1,350,000	May..	1898	.15
35	De Lamar, g. s.	Idaho	2,000,000	400,000	5	.....	.....	.....	.....	2,346,000	May	1899	.12
36	Della S.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	60,000	Jan..	1897	.10
37	Doe Run, l.	Mo...	500,000	5,000	100	.....	.....	.....	.....	72,500	May..	1899	.50
38	Dutch, g	Cal..	1,500,000	150,000	10	.....	.....	.....	.....	39,000	Feb..	1898	.04½
39	Elkton Cons., g.	Colo..	1,250,000	1,250,000	1	.....	.....	.....	.....	656,961	Nov..	1898	.01½
40	El Paso, g. s.	Colo..	650,000	650,000	1	.....	.....	.....	.....	12,393	Jan..	1898	.01
41	Enterprise, s. l.	Colo..	500,000	500,000	1	.....	.....	.....	.....	900,000	Sept..	1898	.05
42	Empire State-Idaho	Idaho	1,000,000	100,000	10	.....	.....	.....	.....	146,233	May..	1899	.20
43	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1	.....	.....	.....	.....	5,000	Mar..	1899	.00½
44	Fern	B.C..	200,000	200,000	1	.....	.....	.....	.....	10,000	Jan..	1898	.05
45	Geyser-Marion. g.	Utah.	1,500,000	300,000	5	.....	.....	.....	.....	96,000	Sept..	1898	.02
46	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	200,000	May..	1899	.01
47	Golden Cycle, g.	Colo..	1,000,000	200,000	5	.....	.....	.....	.....	175,500	May..	1899	.02
48	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*	.....	.....	.....	569,179	Feb..	1897	.01
49	Gold King, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	30,000	May..	1899	.02
50	Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	.....	.....	.....	155,000	Feb..	1898	.15
51	Grand Central, g.	Utah.	250,000	250,000	1	.....	.....	.....	.....	493,750	May..	1899	.15
52	Gwin, g.	Cal..	1,000,000	20,000	50	286,000	Jan..	1898	.....	61,500	April.	1899	.25
53	Hall Mines, Ltd.	B.C..	1,250,000	250,000	5	.....	.....	.....	.....	160,000	May	1898	.25
54	Highland, g.	S. D..	10,000,000	100,000	100	304,000	.....	.....	.....	3,884,718	May..	1899	.20
55	Holy Terror, g.	S. D..	500,000	500 600	1	.....	.....	.....	.....	122,000	Mar..	1899	.01
56	Homestake, g.	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	7,431,250	April.	1899	.50
57	Hope of St. Louis, s.	Mont.	1,000,000	100,000	10	*	.....	.....	.....	762,252	Mar..	1898	.10
58	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*	.....	.....	.....	5,250,000	Mar..	1899	.05
59	Idaho	B.C..	500,000	500,000	1	.....	.....	.....	.....	292,000	Jan..	1899	.05
60	Iowa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	95,000	June.	1898	.00½
61	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10	*	.....	.....	.....	507,500	April.	1898	.02
62	Isabella, g.	Colo..	2,250,000	2,250,000	1	.....	.....	.....	.....	405,000	Feb..	1899	.06
63	Jack Pot, g.	Colo..	1,300,000	1,000,000	1	.....	.....	.....	.....	25,000	Mar..	1899	.02½
64	Jamison	Cal ..	3,900,000	117,000	10	.....	.....	.....	.....	35,100	April.	1899	.10
65	Jersey Leasing	Colo..	200,000	158,167	1	.....	.....	.....	.....	137,875	Oct..	1898	.03½
66	Lake Superior Iron	Mich.	2,100,000	84,000	25	.....	.....	.....	.....	736,000	Feb..	1899	1.00
67	Le Roi	B.C..	5,000,000	200,000	25	.....	.....	.....	.....	825,000	April.	1898	.10
68	Lillie, g.	Colo.	1,250,000	250000	5	.....	.....	.....	.....	215,360	April.	1899	.05
69	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*	.....	.....	.....	1,350,000	Dec..	1898	.05
70	Matoa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	25,000	Dec..	1898	.02½
71	Mead, g.	Cal..	200,000	200,000	1	.....	.....	.....	.....	100,000	Mar..	1899	.20
72	Mercur, g.	Utah.	5,000,000	200,000	25	*	.....	.....	.....	1,266,000	Jan..	1899	12½
73	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*	.....	.....	.....	4,735,000	Oct..	1898	1.50
74	Modoc, g.	Colo..	500,000	500,000	1	.....	.....	.....	.....	130,000	May..	1899	.02
75	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	*	.....	.....	.....	453,700	April.	1899	.12
76	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*	.....	.....	.....	1,040,000	April.	1899	1.00
77	Montreal.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	7,500	Nov..	1898	.01
78	Moon-Anchor Con., g.	Colo..	1,750,000	600,000	1	.....	.....	.....	.....	261,000	Nov..	1898	.07½
79	Morning Star, g.	Cal..	240,000	2,400	100	70,800	Feb..	1897	.75	720,670	April.	1899	2.50
80	Monument.	Colo..	300,000	300,000	1	.....	.....	.....	.....	12,624	Dec..	1898	.01
81	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	60,000	Jan..	1898	.02
82	Moulton	M nt.	2,000,000	400,000	5	.....	.....	.....	.....	480,00	Feb..	1899	.05
83	Mountain Copper	Cal..	6,250,000	250,000	25	.....	.....	.....	.....	93,750	Sept..	1898	.62½
84	Napa Cons., q.	Cal..	700,000	100,000	7	*	.....	.....	.....	999,000	April.	1899	.20
85	New Idria, q.	Cal..	500,000	100,000	5	.....	.....	.....	.....	120,000	April.	1899	.20
86	N.Y.&Hon Rosario, s.g.	Ariz..	1,500,000	150,000	10	*	.....	.....	.....	1,050,000	May..	1899	.10
87	North Star, g.	Cal..	5,000,000	500,000	10	20,000	June	1895	.02	550,000	April.	1899	.25
88	Nugget.	Colo.	1,000,000	1,000,000	1	.....	.....	.....	.....	20,000	Aug	1898	.00½
89	Ontario, s. l.	Utah.	15,000,000	150,000	100	.....	.....	.....	.....	13,557,500	Nov.	1897	.75
90	Orphan Bell, g.	Colo..	1,000,000	1000,000	1	.....	.....	.....	.....	115,000	Mar..	1898	.01
91	Ophir Hill.	Utah.	25,000	1,000	25	.....	.....	.....	.....	20,000	Dec..	1898	20.00
92	Osceola, c.	Mich.	2,500,000	93,000	25	*	.....	.....	.....	2,522,500	Dec..	1898	2.00
93	Parrot, c.	Mont.	2,300,000	230,000	10	*	.....	.....	.....	2,345,898	Mar..	1899	.30
94	Pennsylvania Cons.	Cal..	5,150,000	51,500	100	50,051	Feb..	1892	.05	64,525	May..	1899	.05
95	Pioneer g.	Cal..	1,000,000	100,000	10	.....	.....	.....	.....	62,500	Mar..	1899	.12½
96	Portland, g.	Colo..	3,000,000	3,000,000	1	*	.....	.....	.....	2,137,080	May..	1899	.02
97	Quicksilver, pref.	Cal..	4,300,000	43,000	100	.....	.....	.....	.....	1,845,411	May..	1899	.50
98	Quicksilver, com.	Cal..	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July..	1882	.40
99	Quincy, c.	Mich.	2,500,000	100,000	25	*	.....	.....	.....	10,470,000	Feb..	1899	.50
100	Rambler-Cariboo	B.C..	1,000,000	1,000,000	1	*	.....	.....	.....	50,000	April.	1899	3.01
101	Raven, g.	Colo..	1,500,000	1,500,000	1	.....	.....	.....	.....	19,500	Mar..	1898	.01
102	Reco, s. l.	B.C..	1,000,000	1,000,000	1	.....	.....	.....	.....	297,500	Jan..	1898	.10
103	Republic Cons., g.	Wash	3,500,000	3,150,000	1	.....	.....	.....	.....	151,550	April.	1899	.01
104	Royal Con., g.	B. C..	2,500,000	2,500,000	1	.....	.....	.....	.....	1,025,300	Mar..	1899	.01
105	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	.....	.....	.....	82,000	April.	1899	.00½
106	St. Joseph, l.	Mo...	3,000,000	300,000	10	*	.....	.....	.....	2,822,000	Mar..	1899	.50
107	Santa Rosalia, g.s.	Cal..	100,000	100,000	1	.....	.....	.....	.....	125,000	Feb..	1898	1.10
108	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan..	1897	.02	1,975,000	May..	1899	.25
109	Small Hopes, s.	Colo..	5,000,000	250,000	20	*	.....	.....	.....	3,325,000	Feb..	1898	.10
110	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	.....	.....	.....	.....	1,105,000	Jan..	1899	.01
111	South Swansea, s. l.	Utah.	150,000	150,000	1	.....	.....	.....	.....	119,960	April.	1899	.05
112	Standard Cons., g. s.	Cal..	2,000,000	200,000	10	99,888	June.	1890	.50	3,858,326	May..	1899	.10
113	Standard.	Idaho	500,000	500,000	1	.....	.....	.....	.....	1,745,000	April.	1899	.06
114	Swansea, s. l.	Utah.	500,000	100,000	5	.....	.....	.....	.....	161,500	May..	1899	.05
115	Tamarack, c.	Mich.	1,500,000	60,000	25	.....	.....	.....	.....	5,570,000	Dec..	1898	.00
116	Tomboy, g.	Colo..	2,000,000	200,000	10	.....	.....	.....	.....	650,000	Dec..	1898	4.25
117	Utah.	Utah.	1,000,000	100,000	10	*	.....	.....	.....	179,000	Jan..	1899	.02
118	Victor, g.	Colo..	1,000,000	200,000	5	*	.....	.....	.....	1,155,000	Dec..	1898	.50
119	Vindicator, Cons. g.	Colo..	1,500,000	1,015,000	1	.....	.....	.....	.....	203,300	April	1899	.05
120	War Eagle, Cons.	B.C..	2,000,000	1,750,000	1	.....	.....	.....	.....	309,000	May..	1899	.01½
121	Western Mine Enterp.	Mont.	500,000	500,000	1	*	.....	.....	.....	48,680	Jan..	1898	.20
122	Whitewater.	B. C..	625,000	125,600	5	.....	.....	.....	.....	194,000	April.	1898	.32
123	Wolverine, c.	Mich.	1,500,000	60,000	25	180,000	Mar..	1895	1.00	150,000	April.	1899	1.50
124	Yellow Aster, g.	Cal...	1,000,000	100,000	10	*	.....	.....	.....	178,789	April.	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01½
2	Alliance, g. s. l.	Utah.	150,000	150,000	1	200,000	Dec..	1895	.10
3	Allouez, c.	Mich.	2,500,000	100,000	25	1,520,937	June.	1894	1.00
4	Alpha Cons., g. s.	Nev..	105,000	105,000	1	316,050	Nov..	1898	.08
5	Alta, s.	Nev..	216,000	108,000	2	3,670,310	Mar..	1899	.05
6	Alta	Utah.	750,000	750,000	1	938	Mar..	1899	.00¼
7	American Quartz, g.	Cal..	1,000,000	100,000	10	1,000	Feb..	1897	.01
8	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
9	Andes, g.	Nev..	300,000	100,000	3	1,200,000	Jan..	1899	.05
10	Arnold, c.	Mich.	1,500,000	60,000	25	180,000	Jan..	1899	3.00
11	Baliol, g.	Cal..	1,000,000	100,000	10	55,000	Mar..	1898	.30
12	Belcher, s. g.	Nev..	312,000	104,000	3	3,525,200	Mar..	1899	.10
13	Belle Isle	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
14	Benton Con. s.	Nev..	10,800,000	108,000	100	587,023	June	1897	.25
15	Best & Belcher, g. s.	Nev..	302,400	100,800	3	2,599,723	April.	1899	.10
16	Bogan.	Utah.	1,250,000	125,000	10	26,875	Dec..	1897	.01½
17	Boston & Cp. Ck., g.	Colo..	400,000	200,000	2	20,000	Aug..	1898	.10
18	Brunswick Cons., g.	Cal..	500,000	500,000	1	160,000	July..	1897	.03
19	Bullion, s. g.	Nev..	100,000	100,000	1	3,125,000	May..	1899	.05
20	Caledonia.	Nev..	300,000	200,000	3	3,210,000	Nov..	1897	.10
21	Centennial, c.	Mich.	2,500,000	100,000	25	460,000	Mar..	1898	3.00
22	Central Eureka, g.	Cal..	4,000,000	400,000	10	92,000	Mar..	1899	.02
23	Challenge Cons, s.g.	Nev..	150,000	50,000	3	430,000	Mar..	1899	.05
24	Chollar, g. s.	Nev..	336,000	112,000	3	2,959,800	Jan..	1899	.10
25	Confidence, g. s.	Nev..	74,880	24,960	3	545,118	May..	1899	.20
26	Con., Cal. & Va.	Nev..	540,000	216,000	2½	734,000	May..	1899	.25
27	Cons. Imperial, g. s.	Nev..	500,000	500,000	1	2,246,000	Nov..	1898	.01
28	Con. New York	Nev..	100,000	100,000	1	160,500	Nov..	1898	.03
29	Crown Point, g. s.	Nev..	300,000	100,000	3	2,980,000	May..	1899	.10
30	Dalton, s. l.	Utah.	2,500,000	500,000	5	58,750	April.	1899	.01
31	Dexter.	Nev..	1,000,000	200,000	5	38,000	Apr..	1898	.15
32	Diamond Con.	Utah.	1,000,000	200,000	5	8,000	Mar..	1899	.04
33	Eagle, g. s.	Cal..	500,000	100,000	5	5,000	Dec..	1896	.05
34	Eagle, g. s.	Ore..	1,000,000	100,000	10	6,000	Oct..	1898	.01½
35	Emerald.	Utah	300,000	300,000	1	3,000	Oct..	1898	.00⅛
36	Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	585,000	Sept..	1898	.20
37	Eureka Con. Drift, g.	Cal..	500,000	500,000	1	175,000	Feb..	1899	.00½
38	Exchequer, g. s.	Nev..	1,000,000	100,000	1	1,020,000	Dec..	1897	.05
39	Florence.	Utah.	1,000,000	200,000	5	500	Mar..	1899	.00¼
40	Four Aces.	Utah.	250,000	250,000	1	5,000	Mar..	1898	.01
41	Galena.	Utah.	1,000,000	100,000	10	10,000	Oct..	1898	.10
42	Geyser, s. l.	Colo..	5,000,000	500,000	10	1,175,000	May..	1899	.10
43	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00½
44	Gold Coin	Colo..	1,000,000	200,000	5	10,000	Mar..	1899	.05
45	Golden Fleece Grav. g	Cal..	130,000	130	1000	56,260	Mar..	1897	2.00
46	Gold & Silver Carb.	Utah.	500,000	500,000	1	2,500	Mar..	1899	.00½
47	Gould & Curry.	Nev..	324,000	108,000	5	4,614,350	Dec..	1898	.10
48	Great Eastern, g.	Utah.	1,500,000	300,000	5	5,000	Oct..	1898	.00½
49	Great Western, q.	Cal..	5,000,000	50,000	100	75,526	May..	1899	.15
50	Hale & Norcross, g.s.	Nev..	11,200,000	112,000	100	5,716,280	May..	1899	.10
51	Horse Shoe Bar Cons.	Cal..	6,000,000	60,000	100	85,800	Jan..	1899	.05
52	Julia Con.	Nev..	110,000	110,000	1	1,498,800	Jan..	1899	.03
53	Jupiter, g.	Cal..	2,000,000	20,000	100	80,000	Feb..	1898	.20
54	Justice, g. s. c.	Nev..	210,000	105,000	2	3,652,000	Feb..	1899	.05
55	Kentuck.	Utah.	600,000	300,000	2	30,000	Aug..	1898	.10
56	Kentuck Cons., s.	Nev..	105,000	105,000	1	125,300	June.	1898	.05
57	Lacrosse, g.	Colo..	1,000,000	100,000	10	*	.....	.....	.....
58	Little Pittsburg.	Utah.	2,000,000	400,000	5	18,000	Dec..	1898	.01
59	Lower Mammoth.	Utah.	150,000	150,000	1	15,000	Oct..	1898	.05
60	Lucky Bill.	Utah.	300,000	120,000	2.50	56,400	June.	1898	.01½
61	Marguerite, g.	Cal..	500,000	50,000	10	75,000	Feb..	1899	.10
62	May Day.	Utah.	100,000	400,000	¼	4,000	Jan..	1899	.00½
63	Mayday, g. s.	Cal ..	50,000	50,000	1	5,000	May..	1898	.10
64	Mayflower, g	Cal..	1,200,000	60,000	20	6,000	Sept..	1898	.05
65	Merced, g.	Cal..	1,500,000	100,000	15	200,000	July..	1896	2.00
66	Meteor, s. l.	Utah.	600,000	300,000	2	6,734	Feb..	1899	.01
67	Mexican, g. s.	Nev..	302,400	100,800	3	2,258,720	Nov..	1898	.10
68	Montreal.	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
69	Mt. Diablo s.	Nev..	5,000,000	50,000	100	150,000	Dec..	1898	.10
70	Morning Star, s.	Nev..	1,500,000	150,000	10	32,500	Dec..	1898	.00½
71	Nashville, g.	Cal ..	115,000	11,500	10	2,000	Sept..	1898	.17
72	North Banner, g. s.	Cal..	1,000,000	100,000	10	21,794	Oct..	1896	.02
73	North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
74	No. Gould & Curry	Nev..	100,000	100,000	1	375,000	Dec..	1898	.10
75	Northern Light, g.	Utah.	2,000,000	400,000	5	80,000	July	1898	.10
76	Occidental Cons g s.	Nev..	300,000	100,000	3	509,179	April.	1899	.10
77	Ophir, g. s.	Nev..	324,000	108,000	3	4,619,768	April.	1899	.15
78	Opohonga.	Utah.	200,000	100,000	2	1,500	June.	1898	.01
79	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
80	Osceola, g.	Cal ..	10,000,000	100,000	100	10,924	Sept..	1898	.01
81	Overman, g. s.	Nev..	230,400	115,200	2	4,135,459	Mar..	1899	.05
82	Peer, s.	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
83	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
84	Pine Hill, g	Cal ..	1,000,000	100,000	10	30,000	July..	1897	.05
85	Potosi, g. s.	Nev..	336,000	112,000	3	2,168,400	May..	1899	.10
86	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
87	Rescue, g.	Nev..	100,000	10,000	10	5,500	Feb..	1899	.05
88	Reward, g	Cal..	64,000	64,000	1	63,680	Nov..	1898	.02
89	Ridge, c.	Mich.	500,000	20,000	25	239,939	Feb..	1897	1.00
90	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
91	Savage, g. s.	Nev..	280,000	112,000	2½	7,309,800	Feb..	1899	.10
92	Scorpion, s.	Nev..	100,000	100,000	1	445,000	Dec..	1897	.05
93	Seg. Belcher & M g s.	Nev..	200,000	100,000	2	368,000	Nov.	1898	.03
94	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
95	Shower Con.	Utah.	2,000,000	400,000	5	8,000	Mar..	1899	.02
96	Sierra-Nevada, g. s.	Nev..	300,000	100,000	3	6,706,910	Feb..	1898	.20
97	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*	.....	.....	.....
98	Silver Hill, s.	Nev..	108,000	108,000	1	2,220,200	May	1898	.02
99	Silver King, s.	Ariz..	10,000,000	100,000	100	465,000	Feb..	1899	.25
100	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*	.....	.....	.....
101	Silver State, g.	Colo..	700,000	700,000	1	*	.....	.....	.....
102	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept..	1897	.00½
103	Siskiyou Con., s.	Cal ..	2,000,000	200,000	10	46,000	Apr..	1898	.01
104	Snow Flake.	Utah.	500,000	100,000	5	49,000	April.	1899	.02
105	South Fork Con.	Utah.	50,000	50,000	1	5,000	Mar..	1898	.01
106	South Side.	Mich.	1,000,000	40,000	25	4,000	Jan..	1899	.10
107	Star, g. s.	Utah.	1,000,000

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

NOTE.—These quoations are for wholesale lots n New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to May 1st. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Cnemicals and Minerals.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.10@$0.15
Powdered	"	.08@.10
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour.	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	32.00
Pumice Stone, Am. powd.	lb.	.01¾@.02
Italian, powdered	"	.01½
Lump, per quality	"	.05@.40
Rotenstone, ground	"	.02½@.03
Lump, according to quality	"	.05@.14
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure.	lb.	.02¾
30% ch. pure	"	.06½
80% pure	"	.09
Glacial, pure	"	.11¾
Chem. pure	"	.21
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst.	"	.11
Powdered	"	.10½@.11¼
Carbolic, cryst. in drums	"	.14½@.15½
Carbonic, liquid	"	.15
Chromic, crude	"	.25
Chem pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure.	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst.	"	.31½@.32
Powder	"	.32@.32½
Alcohol—Grain	gal.	2.42@2.44
Extra refined wood, 95%	"	.75
Special, refined, 97%	"	.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3.50
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.04½
Sulphate, pure	"	.02
Ammonia—Aqua, 16°	"	.02
18°	"	.02½
20°	"	.03
26°	"	.04½
Ammonium—Bromide, p'r	"	.52@.53
Carbonate lumps	"	.07¼@.07½
Powdered	"	.08¼@.08½
Muriate, gran., white	"	.05¼
Lump	"	.08¼
Gray	"	.05½
Nitrate, white, pure (99%)	"	.10½
Antimony—Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¼
Best	"	.08½
Oxide, com'l white, 95%	"	.20
Com'l white, 99%	"	.35
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04½@.04½
Red	"	.07¾@.08
Asphaltum—California Ventura	sh. ton	32.00
Cuban, refined	lb.	.04½
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	16.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate, lump, 80@90%	"	25.00@27.50
92@98%	"	25.25@20.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.08
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01@.02¾
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@20.00
Floated	"	19.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	5.10
Second grade	"	4.35
Alabama, f. o. b. cars Rock Run	"	3.85
Benzoin 50%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.50
Subnitrate cryst.	oz.	.09@.10
Bitumen, "B"	lb.	.03½
"A"	"	.05
Bone Ash	"	.02½@.03½
Borax—Cryst. and pow'd	"	.07@.07¼
Calcined	"	.19
Bromine—Bulk	"	.45
Cadmium Metal'lic	"	1.90@2.00
Sulphide	"	1.90@2.25
Sulphate	"	2.00@2.50
Calcium—		
Carbide, in ton lots, f. o. b. Niagara Falls, N.Y.	"	.03@.04

	Cust. Meas.	Price.
Calcium—		
Acetate, pure white	lb.	.10
Gray	100 lbs.	1.25@1.30
Brown	"	.80@.85
Carbonate, ppt.	lb.	.05
Chloride	100 lbs.	.90@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.95@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.90
Sand cement, 400 lbs.	"	1.85@1.95
Slag cement, imported.	"	1.65
Ceresine—		
Orange and Yellow	"	.10½@.11½
White	"	.11@.13½
Chalk—Lump, bulk	sh. ton	2.15@2.25
Ppt.	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex ship	lg. ton	23.00
Clay, China—Am. com., ex-dock, N. Y.	sh. ton	7.50
Am. best, ex-dock, N. Y.	"	8.50
English, common	lg ton	11.00
Best grade	"	17.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	1.76
Gray	"	2.25
Smalt, blue ordinary	"	.14
Best	"	.25
Chem. pure	"	5.00
Copperas	100 lbs.	.60@.62½
Copper—Carbonate	lb.	.16@.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, black	"	.16@.20
Red	"	.16@.20
Cream of Tarter—crys.	"	.23½@.23½
Granulated	"	.23½@.23½
Powdered	"	.23½@.24
Cryolite	"	.06¾@.08½
Explosives—		
Blasting powder, A	"	.10@
Blasting powder, B	"	.05@.05½
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder, by carload	"	.10
Dynamite, (40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine, for nitro (32 2-10° Be.)	"	.11@.11¼
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	6.50@7.00
Gravel	"	6.00
Crushed	"	6.00
Ground	"	10.50@11.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth— Ground, best qualities	"	20.00@.40 00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white, b'k'n	lb.	.07
Com'l, broken	"	.06¼
White, gran.	"	.08¾
Nitrate, com'l	"	.06½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.65@.75
Finishing	lb.	.75@.80
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00
German (85%)	"	12.00
Calcined, 600° C. (Greece)	sh. ton	17.50
1,000° C. (Greece)	"	19.50
3,000° F. (Greece)	lg. ton	30.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome.	"	226.00
Magnesium—		
Metallic, ingots (Ger).	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.21@.22½
Marble—Flour	sh. ton	5.50@8.00
Mercury—Bichloride	lb.	.59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd, coarse	lb.	.06@.08
Fine	"	.08@.10

	Cust. Meas.	Price.
Mica—Sheets, 1½x3 in	"	.60
8x10 in	"	13.00
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—Black, reduced 29 gr., 25@30 cold test	gal.	.07@.07½
Black reduced 29 gr. 15 cold test	"	.08@.08½
Black reduced 29 gr. zero	"	.11@.12
Black reduced summer.	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	13@.15½
Extra cold test	"	.21@.25
Gasolene, 86°	"	.14@.15
88°	"	.16@.17
90°	"	.19@.20
Neutral filtered, lemon, 33@34 gr.	"	.13@.18½
White, 33@34 gr.	"	.21@.23
Wool grade, 32 gr.	"	.11@.14
Naphtha, crude, 68@72°	"	.10
Deodorized	"	.10½
Paraffine, high viscosity	"	.20@.25
903–907 sp. gr	"	.09¼@.09½
903 sp. gr.	"	.08¼@.08½
883 "	"	.07½@.07¾
865@875 sp. gr.	"	.07¼@.07½
Red No. 1	"	.08¾@.09¼
No. 2	"	.08¼@.08¾
Linseed, domestic raw	"	.46@.48
Boiled	"	.50@.51
Calcutta, raw	"	.58
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—		
Foreign	"	.06@.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.19@.25
Super	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.05½@.05¾
English flake	"	.07¾@.08
Metallic, brown	sh. ton	18.00@20.00
Red	"	18.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾@.05
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.07¾@.08¾
Foreign, as to make	"	.08½@.11
Paris green, pure	"	.12½@.14
Red lead, American	"	.05¼@.05¾
Foreign	"	.07½@.08
Shellac, "D. C."	"	.27@.28
Native	"	.16@.17
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	61
Chinese	"	.80@.90
English, imported	"	.70@.90
Artificial	"	.10@.20
White lead, Am., dry	"	.05@.05¾
In oil	"	.05½@.05¾
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.40@.50
Gilders	"	.47@.56
Zinc white, Am. ex. dry	lb.	.04½@.05
American, red seal	"	.07@.05¾
Green seal	"	.07½@.08
Foreign, red seal, dry	"	.07@.08¾
Green seal, dry	"	.07¼@.07¾
Foreign, red seal, in oil	"	.10¼@.11¼
Green seal, in oil	"	.11¾@.12½
Plumbago—Am., pulv., f.o.b., Providence, R. I.	sh. ton	30.00
Lump	"	8.00
German, lump	100 lbs.	1.25
Pulverized	lb.	.02
Ceylon, common	"	.04
Best	"	.06@.10
Pulverized, common	"	.04½
Best	"	.06@.08
Italian, pulv	"	.01¾
Potash—Caustic	"	.04@.05
Potassium—		
Metallic, in balls (Ger).	kg.	17.85
Bicarbonate cryst.	lb.	.08½
Powdered or gran.	"	.12
Bichromate	"	.09½@.09¾
Bromide	"	.46@.48
Carbonate	"	.02¾@.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.30
Permanganate, pure cr.	"	.14@.15
Silicate	"	.06
Prussiate, yellow	"	.16@.17
Red	"	.37@.40

	Cust. Meas.	Price.
Potassium—		
Sulphide, com'l	lb.	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	1.35
Best	"	3.00@3.10
Salt—N.Y. com. fine abt. 280 lbs.	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.80@3.85
Refined	"	4.25@5.50
Silica—		
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.42@.43
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.75
Acetate, com'l	"	.09¼
Bichromate	"	.07½
Bisulphite, com'l	"	.01
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Phosphate	"	.03@.04
Silicate, com'l, 40°	"	.01
Concentrated	"	.04¾
Sulphate, gran., puri'd.	"	.03
Sulphide	100 lbs.	1.50
Sulphite	lb.	.02¾
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Carb., ppt.	"	.13@.14
Nitrate	"	.07¼@.07¾
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian, best	"	20.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.18@.19
Muriate, best	"	.10
Oxide, white, ch. pure	"	.32@.35
Uranium—Oxide	"	1.80@2.00
Zinc—Metallic, ch. pure	"	.09
Carbonate	"	.15
Chloride	"	.07½@.10
Dust	"	07@.07½
Sulphate	"	.02¼

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	2.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	28.00
Chromium—Fused	kg.	5.95
Pure powder	"	1.79
Chem. pure cryst	grm.	.19
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	lb.	2.50
Indium	grm.	4.05
Iridium	"	1.19
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure	"	1.55
Selenium—Com'l powder	kg	26.18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	7.14
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	23.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	7.50@8.00
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	23.80
Powder, 95@98%	kg.	2.38
Chem. pure	"	7.14
Yttrium	grm.	3.35
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00